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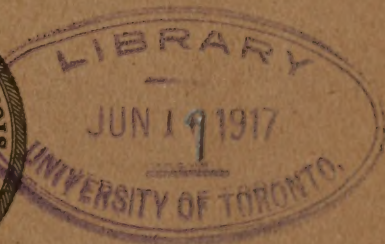
## UNIVERSITY OF ILLINOIS

SCHOOL OF EDUCATION

BULLETIN NO. 17

Issued From The  
HIGH SCHOOL VISITOR'S OFFICE

PROCEEDINGS OF  
THE HIGH SCHOOL CONFERENCE  
OF NOVEMBER 23, 24, 25, 1916



PUBLISHED BY THE UNIVERSITY OF ILLINOIS  
URBANA

Dates of 1917 Conference November 22, 23, 24





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## PROCEEDINGS OF THE HIGH SCHOOL CONFERENCE OF NOVEMBER 23, 24, 25, 1916

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Edited by Horace A. Hollister

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## CONFERENCE COMMITTEES, 1916-1917

- General Conference Committee:** H. A. Hollister, University, Chairman; J. Calvin Hanna, State Department, Springfield; B. H. Bode, University; H. V. Canter, University; W. C. Bagley, University; A. P. Johnson, Urbana, (also chairman of Administrative Section Committee); W. W. Earnest, Champaign; T. R. Isaacs, Decatur; W. W. Whitney, Chicago; Laura B. Woodruff, Oak Park; Guy M. Pelton, Evanston; Ben L. Smith, Pekin; Florence Harrison, University; Florence Skeffington, Charleston; J. L. Rich, University; C. E. Howell, Decatur; L. C. Irwin, Joliet; Blenda Olson, Macomb; J. Lawrence Erb, University; Roy N. Fargo, University; T. M. Barger, Bloomington; M. L. Flaningam, Urbana.
- Administrative Section:** A. P. Johnson, Urbana, Chairman, 1918; R. G. Beals, Taylorville, 1917; W. L. Goble, Elgin, 1919.
- Agricultural Section:** T. R. Isaacs, Decatur, Chairman, 1919; L. F. Fulwiler, Mt. Pulaski, 1917; E. D. Lawrence, McNabb, 1918; E. B. Collett, DeKalb, 1917; J. H. Green, University, 1918; A. W. Nolan, University, Secretary, 1919.
- Biology Section:** W. W. Whitney, Chicago, Chairman, 1917; Celestine Rice, Decatur, 1919; J. L. Pricer, Normal, Secretary, 1918.
- Classics Section:** Laura B. Woodruff, Oak Park, Chairman, 1918; Mima A. Maxey, Carlyle, 1917; Harriett L. Bouldin, Springfield, Secretary, 1919.
- Commercial Section:** Guy M. Pelton, Evanston, Chairman, 1917; N. A. Weston, University, 1918; Miss Barrett, Centralia, 1919.
- County Superintendents' and Village Principals' Section:** Ben L. Smith, Pekin, Chairman, 1918; G. P. Chapman, Chatham, 1917; Wm. A. Hough, Belleville, 1919.
- Domestic Science Section:** Florence Harrison, University, Chairman, 1917; Isabel Bevier, University, 1917; Anne Green, DeKalb, 1918; Bertha Case, Peoria, 1918; Kathleen Gaynor, La Salle, 1919; Helen Murphy, Decatur, 1919.
- English Section:** Miss Florence Skeffington, Chairman, Charleston, 1919; H. G. Paul, Urbana, 1919; Miss Simonson, DeKalb, 1917; Miss Stella Kleinbeck, Murphysboro, 1917; H. Adelbert White, Galesburg, 1918; W. W. Hatfield, Chicago, 1918; Miss Eva Mitchell, Bloomington, 1918; B. C. Richardson, Alton, 1918.
- Geography Section:** J. L. Rich, University, Chairman, 1917; George White, Bethany, 1917; W. E. Andrews, Pana, 1918; F. W. Cox, Lawrenceville, Secretary, 1918.



- Manual Arts Section: C. E. Howell, Decatur, Chairman, 1917; A. F. Payne, Peoria, 1917; L. A. Tuggle, Danville, 1918; Mary B. Hill, Champaign, 1918; E. J. Lake, University, 1919.
- Mathematics Section: L. C. Irwin, Joliet, Chairman, 1917; L. T. Wilson, University, 1919; M. J. Newell, Evanston, 1918.
- Modern Language Section: Blenda Olson, Macomb, Chairman, 1919; John D. Fitz-Gerald, University, 1917; Lydia M. Schmidt, University High School, Chicago, 1918.
- Music Section: J. Lawrence Erb, University, Chairman, 1919; W. D. Armstrong, Alton, 1917; Mabelle Glenn, Bloomington, 1918; Ruth Clapp, Urbana, 1918; Mrs. Elizabeth McNair, Mattoon, Secretary, 1919.
- Physical Education Section: Roy N. Fargo, University, Chairman; Louise Freer, University; H. E. Brown, New Trier, Kenilworth; L. W. Smith, Harvey.
- Physical Science Section: T. M. Barger, Bloomington, Chairman, 1917; J. A. Smith, Urbana, 1919; B. S. Hopkins, University, Secretary, 1918.
- Social Science Section: M. L. Flaningam, Urbana, Chairman, 1917; U. S. Parker, Quincy, 1918; A. C. Cole, University, Secretary, 1919.
- Committee on Program of Studies: W. C. Bagley, University, Chairman; E. A. Turner, Normal; W. D. Wham, Carbondale; E. H. Taylor, Charleston; T. J. McCormack, La Salle; H. E. Brown, Kenilworth.
- Two Interlocking Committees: Biology and Agriculture: J. L. Pricer, Normal, Chairman; W. E. Andrews, Pana; L. F. Fulwiler, Mt. Pulaski.  
Languages: John D. Fitz-Gerald, University, Chairman; J. Calvin Hanna, Springfield; Florence Skeffington, Charleston.

# STATISTICS OF THE HIGH SCHOOL CONFERENCE, 1916

Total Attendance .....	1600
Total No. registered.....	1562
Total registration exclusive of the University.....	1438
No. of Public High Schools represented.....	328
No. of High School teachers.....	1326
No. representative of Colleges and Academies.....	49
No. representative of Normal Schools.....	31
No. representative of School Boards.....	5
No. of County Superintendents.....	14
No. representative of book houses, etc.,.....	18
No. of High School teachers whose expenses were paid in full.....	230
No. of High School teachers whose expenses were paid in part.....	253
No. of High Schools represented by delegates whose expenses were paid in full or in part.....	182

Following is the registration by sections:

Administrative .....	244
Agriculture .....	41
Biology .....	74
Classics .....	118
Commercial .....	66
County Superintendents and Village Principals.....	38
Domestic Science .....	86
English .....	244
Geography .....	16
Manual Arts .....	53
Mathematics .....	121
Modern Language .....	91
Music .....	42
Physical Science .....	66
Social Science .....	117
No section given .....	145

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1562



## PART I

### GENERAL SESSIONS

#### I. Thursday Evening.

The 1916 High School Conference at the University of Illinois began its first session on Thursday evening, November 23. The first number was a concert by the University Military Band under the direction of A. A. Harding. The concert was begun at 7:15 P. M. and continued for about an hour. There was a good audience and the music was thoroughly appreciated.

Following some announcements the address of the evening was presented by Professor H. A. Hollister, Chairman of the General Conference Committee. The address was in the nature of a message from the General Committee and had for its subject "The Conference—Its Aims and Its Possibilities." Mr. Hollister spoke as follows:

#### THE CONFERENCE—ITS AIMS AND ITS POSSIBILITIES

##### A Message From the General Conference Committee.

Possibly not more than one person believed at the beginning that this Conference would ever develop to such magnitude and significance. It was undertaken in the face of the fact that many educational organizations already had the field and clamored for the time and attention of the teachers in the county, district and state conventions. From a beginning of about 75 members in 1905 it grew steadily to an attendance of 1400 in 1915. From dealing with only two high school subjects—English and science—it has come to include in the scope of its discussions all departments of high school activity and the problems of high school administration.

Yet when we consider the situation the growth attained is not at all beyond accounting for. This conference was organized to meet a need widely felt and frequently expressed among high school teachers and principals. Among the numerous educational gatherings of the day little opportunity was given for the discussion of high school problems; and the two or three hours allotted to high school interests were, from the nature of the situation, necessarily of a very general character. Meanwhile our high schools were growing rapidly in num-

bers, size, and scope of work. The need was urgent that there be some provision for the discussion of the innumerable problems arising as well as for an intensive study of the principles and tendencies involved in the evolution of this the latest development among public educational institutions.

Through the operation of the plan of college entrance by certification there had grown up between the university and the high schools of the state a very definite and, we may say, intimate relationship which had led to various attempts at getting together in an effort to solve such mutual problems as had grown out of this common interest in the development of high schools. There was no other way or movement apparent; and the relationship already established seemed to lay upon the University the task of making some provision for the more extensive cooperative study which the situation demanded. Hence the present series of conferences.

There had been efforts at conference before, but at a time of year when attention was largely directed away from academic interests. These conferences lacked in comprehensiveness and in effective organization; and, although some good things were accomplished, they failed to meet satisfactorily the rapidly growing needs. They did, however, serve to accentuate the larger possibilities, and it was on this basis that the new type of conference was established.

You know the story of its phenomenal growth, and of the widespread interest in it. A few months ago, in talking with a friend now in the East who was formerly an active worker with us, some mention was made, incidentally, of the Illinois High School Conference. "You are mistaken," he said; "the Conference is now national. It no longer belongs to Illinois alone." So rapidly has this work grown, and at the same time the work of high school visitation, that the chairman of the General Conference Committee has been unable to keep in close enough touch with this development to assist very much in the direction of affairs or to present in any complete form the aims and purposes of the conference as originally conceived by its organizers.

It seems fitting, therefore, to present at this time a more extended discussion of Conference affairs and to invite the fullest possible cooperation of all interested teachers of the state in more fully realizing its aims and its possibilities. More time is now at the chairman's command for aiding in the direction of the work and more funds are available for carrying forward investigations and for publishing results. We began with an allowance of \$500 per year. The last increase by the Board of Trustees makes the fund \$2000. While this is not a large amount when the magnitude of our work is considered, still it is



enough to enable us to accomplish much good if wisely used. It is not always an easy task for those of us charged with the care and proper use of these funds to secure just the kind of cooperation from section committees which the situation and our real needs demand.

It has been commonly understood from the beginning that this is a working conference. When this work was started we knew perfectly well that there was neither place for nor need of just another "teacher meeting." There were already enough, possibly too many, of these meetings. Unless there could be discovered a distinct field of service and that an unoccupied field, there could be no justification for attempting such an organization. That there was such a field the outcome seems to demonstrate conclusively. Among the many words of appreciation which have come to the committee nothing more gratifying has ever been heard than these words to your chairman from the President of this University when he said, after our attendance had passed the 500 mark: "I did not believe you could do it, in the face of all the other organizations, but you have, and the Conference is a success."

We said a moment ago that the funds available are limited. While there is no authority given for such a statement yet I fully believe that when we, as a working conference, can more fully demonstrate the possibility of a larger usefulness in such a cooperative method of studying the funds will not be lacking for carrying forward such a work for making the results available to all the schools of our state.

Perhaps no field of human endeavor, considered at its best, has been less in common with that sort of self-seeking which manifests itself in a petty political wire-pulling for recognition than that of education. It was the appreciation of this fact that led to the general plan of organization by committees. It was hoped that all temptation to such methods would thus be eliminated. And such, indeed, seems to have been the result. But our plan of organization has seemed at times to limit the freedom of committees as well as individual members of the Conference. This in spite of the fact that the aim of the general committee has ever been to encourage the fullest possible presentation of high school interests in all discussions and committee work. It has been felt by most of us that to limit such freedom of participation in all the problems presented for discussion and adjustment would be to defeat the fundamental purposes which originally called us together. We have been told repeatedly, however, that there is such freedom. Whenever any one has felt that this is not true the committee will be glad to know the cause, that if possible it may be eliminated.

Partly because of a sense of the equity involved, and partly because of our desire to realize the fullest freedom, the policy of the executive

committee of the conference has been to seek to recognize worth wherever found. Such recognition has included payment of the railroad fares of those who have given of their time and thought to prepare important papers or reports. It has also included the payment of the expenses of members of committees for necessary meetings other than at the time of the Conference. It has not always been easy to make the evidently necessary discriminations, nor have our section committees all grasped the real purpose of the general committee in these matters of finance.

The action of the University in recommending to the Boards of Education that one or more delegates be sent from their high schools and, where practicable, all or part of their expenses paid, has been in line with the desire for the fullest possible representation and participation on the part of all types of high schools.

We are justly proud of the growth we have achieved as the evidence of a service rendered where there was a real need. But the very fact of this rapid growth to such huge proportions may readily become a source of weakness when the real purpose and function of our conferring together are considered. If we count the Athletic Association, which shares the day with the Administrative Section, there are now sixteen different organizations in session on Friday. The total registration last year was 1400 or 1286 not counting the university contingent of faculty members and students of education. Taking the latter number as a dividend there would be an average of 80 persons for each of the sixteen groups.

This factor of numbers brings to the executive committees of sections a peculiar problem—perhaps we should say temptation. They are anxious to interest these large groups, or to secure as large attendance as other sections. The temptation often is to seek out speakers of renown for their programs after the time honored custom of teachers' gatherings. Frequently all energy and resources are used to get just another program and there is neither time nor place nor funds for carrying on any study of the real problem. For usually such programs are too crowded to admit of any real freedom of discussion.

Now the great weakness of our numerous educational rallies lies in the fact that teachers are constantly held in a state of receptivity. The great mass of them never participate, never are given opportunity for reaction. Yet it is well known that reaction is the final and completing stage of experience without which there is no effective education. Our most significant problem then is how to incite the great numbers that attend our group meetings to some reaction. Never was there a greater opportunity and with abundance of material so promising.



If we can but acquire and hold the attitude of complete collaboration reaching into all departments of high school activity, and stick together in it, our power for accomplishment in the interests of better, freer, more efficient high schools will be unlimited.

I am not speaking as one who would exploit such an opportunity for self-aggrandizement. I stand ready to cast the lot of personal service unreservedly with all those who see enough of real human value in such a movement to forego any personal gain for the common cause. For it is only thus that such a movement can hope to succeed.

One source of weakness is in the delay in organizing the year's work. Committee membership is changed too abruptly, and especially the chairmen of committees. In order to carry out the real aims of the conference the main problems for the year's studies should be outlined at the meeting of the section, or immediately after by the committee, so as to have at least a semester of the same school year for investigation or experimentation. It is too late to begin studies for a November meeting in September. The practice is wasteful of both time and resources. Indeed it would be far better were each committee to come to the annual meeting prepared to outline plans for the following year.

It is necessary that someone should take that directive interest in the various departments which any sort of effective cooperative work requires. The general committee last year definitely requested that such a service be rendered by your chairman. But who is sufficient for such a task, a task which involves at least some degree of familiarity with practically every phase of the high school's functioning? Certainly the heavy work of the high school visitor's office has left no room for such service during the past year. But with promise of more time to devote to this work in future an effort will be made, if we may have your full cooperation, to assume more definitely this directive work.

Our sectional activities seem also to be suffering from that instability of organization to which we have already referred. Let us strive for greater continuity of effort. This year the work of at least three sections has been very near to collapse because of lack of attention to committee organization or the loss of our committee members through removal from the state. It was only accidentally and quite late in the summer when the chairman learned of these changes, and as a consequence the programs of these sections have been too hurriedly gotten together.

There seems, also, to have arisen a misconception of the purpose in our plan of renewing committees. Where one member is to be chosen each year it is not at all necessary that a new member be elected

each time or that when this happens to be the chairman the newly elected member is to be chairman. Such a policy, if continued, would prove fatal to any effort at that continuity of work so necessary to carrying forward any important studies which a given section may undertake.

We need to do more "follow up" work in connection with syllabi recommended or other plans for betterment of our school work. Habits of long standing in practice are always stronger than paper announcements or verbal recommendations. May not some scheme be devised in each section whereby the cooperation of high school teachers may be secured to the extent of actually trying the methods recommended and reporting back the results from year to year? These matters will not work of themselves without having from some source a definite stimulation to action.

Studies, to be successful, will require thoughtful planning and outlining possibly by special committees appointed for such work. Such studies should be considered as involving such economic problems as time of those assisting in tests and investigations; the expense entailed; and the practicability of securing needed data. At the same time the resources of the section must be saved from the expense of over-full programs. We are not aiming to carry on simultaneously sixteen so-called "inspirational" meetings. Such a procedure does not come within the meaning of a conference.

This is not to be construed as an objection to all inspirational addresses. We all need, at times, that renewal of spirit which comes from some strong leader in thought. But all inspiration and no reaction often has a most benumbing influence on those mental forces which make for progress. My contention is that in the secondary field, at least, our greatest present need is that sort of reaction from such a meeting as this that, for the rest of the school year, shall convert classroom, laboratory, shop, school-kitchen, and gymnasium into laboratories of experimentation and observation along the lines here definitely recommended.

We have apparently come to that place in our evolution where some needed changes should be made in our organization. On several occasions there has arisen the criticism that we are tending too strongly towards a narrow differentiation of work in our sections; that good high school instruction requires that more attention be given to correlation naturally existing among some groups of subjects, especially at the secondary stage of presentation. This same idea has arisen in a peculiarly interesting form in the sudden movement towards general science as a panacea for the ills of science teaching in high school.



It is believed that this need is more general than in just the one field of science instruction. It is proposed, therefore, on the approval of the executive committee, to undertake the establishment of certain "inter-locking committees," as we may call them, whose business it shall be to consider these relations and make recommendations from time to time looking towards a getting together of such related groups. The initial steps toward establishing such committees will be taken in connection with the present session of the conference.

Our publications are much in demand, but they are much more limited than the amount of work we are doing seems to call for. It is hoped that this year we may be able to put out a bulletin on high school libraries in which may be included lists of books recommended by our various library committees, together with other information desirable in order to enable a school to properly organize this very important branch of the school service.

There are also many things running through a series of years in several of the section proceedings which would be of real worth if collected and rearranged for special publication. I am thinking now of **work in the classics** in English, in mathematics, in domestic science, in agriculture—in fact in nearly all the sections. Probably if some one would undertake this work of editing it might be possible from year to year to issue at least one special bulletin that would represent a distinct contribution in its field.

Our administrative section has been a disappointment in so far as the study of problems is concerned. Yet what an array of material is waiting for the attack. May we not hope that in the near future something may be undertaken in this group? It is well enough, at times, to review what others have done; but why may not we be in at the doing? We have the people and the power, and the problems are waiting. Almost any thoughtfully edited educational journal or magazine of current literature will frequently be found to present some criticism of educational conditions existing in high schools or in connection with their administration. A good illustration is to be found in William B. Mooney's article on *The Relation of Secondary Schools to Higher Schools in the United States* as given in the September number of the *Pedagogical Seminary*. Here will be found enough problems suggested by criticisms to last through several years of careful observation and testing. Why not organize and "dig in" for such a campaign? It is up to your group, fellow administrators. There was, and is, no other good reason for your organization as a part of this conference.

And why should not the work of the Athletic Association stand

by itself in a section that should deal with the problems of physical training? Are there not enough, out of the more than two hundred who register in the Administrative Section, to form such a group and to attack in earnest the large array of problems here presented?

Would it be wise to omit a general session on Thursday or Friday evening, or Saturday morning, and give the extra time to the group work? If you think so let the committee know. We have reserved these general meetings chiefly for their inspirational effect.

There are numberless problems for most of the groups still waiting to be solved. We invite, we urge, that all become active along this line. If any committee is in want of a problem send in a requisition for one, or several from which to choose, and your chairman will try to meet the demand.

It is our opportunity to disentangle, reorganize and revitalize, out of the huge mass of educational materials, processes and ideals, those portions which logically and biologically belong to the high school. What better method could be devised in a state for such an accomplishment? Here is opportunity for widest cooperation with real schools and real teachers as laboratories and laboratory assistants. We have, indeed, a biological problem in this evolution of the high school. It must necessarily be a matter of survivals. This, likewise, must be true of our organization as a conference. And here, as in the case of all organisms, we must beware of hurtful parasites that may sap our native resources and thus prevent a normal functioning.

It is we who must liberate this higher school of the masses, this lowest level of education which can safely serve as a criterion for American citizenship. It is we who may set it free to accomplish that for which it was sent. But to do this we must know the values and equivalences of the elements which we propose to reorganize and revitalize so that there may be set up the vital process of normal growth.

And what is the nature of that freedom which is demanded by the necessities of a great democracy? Let us tell it in the language of one of the characters of Ernest Poole: "‘They read all!’ cried Isadore. ‘Look at this Darwin on my desk. In a year so many have read this book that it is a case for the Board of Health. And look at this shelf of economics. I place it next to astronomy. And I say to these people, Yes, read about jobs and your hours and wages. Yes, you must strike, you must have better lives. But you must read also about the stars—and about the big spaces—silent—not one single little sound for many, many million years. To be free you must grow as big as that—inside of your head, inside of your soul. It is not enough



to be free of a czar, a kaiser, or a sweat-shop boss. What will you do when they are gone? My fine people, how will you run the world? You are deaf and blind, you must be free to open your own ears and eyes, to look into the books and see what is there—great thoughts and great feelings! And when you have seen them you must think—think it all out every time! That is freedom!”

Here we have a very definite picture of the mission of the high school to the masses.

This is no plea for a sentimental freedom, for individualism over-emphasized, that would disown all right to the state or of society to regulate and to provide such meets and bounds as a living together in a harmonious social group may be known to require. With the school as with the individual the problem is to secure that fullest development of individuality that will readily comport with social team work; and that community action which shall, in turn, make for the highest and broadest development of the social unit that is compatible with its more extended environment.

We are not yet half conscious in our schools of the real significance of these institutions as social and socializing forces. Indeed we may very properly say that out of the work of our high schools largely, and out of the community life they represent, must come the real democratization of the masses. Let us give more heed to the kind of thing our own Hieronymus and others of his kind are doing, to the end that the spirit of this great nation-wide movement for social betterment may grip the minds and fix the inclinations of our high school boys and girls.

There are problems and problems. Some are in the nature of equations of but one unknown, others of two or more unknowns, and others still are indeterminates except as time and experience shall change the factors of their terms. Let us catch and hold the step in this onward march of the children's crusade. A wise man has said that “whatever a nation would have appear in the lives of its people it must first put into its schools.” Let us make this thought the basis of final testing as to what we shall put in or take away from the ever cumulative fields of human thought and experience, whenever we lay our hands upon the curriculum of the American high school. The call is therefore to your altruistic selves for attainment to a higher level of action, through such training, in service, as this conference offers. May we not hear of ever increasing responses to the call?

At the close of the regular program a meeting was called of the principals of North Central High Schools present. The purpose of this meeting was to nominate a secondary man to represent the high schools

of the state on the State Commission of three members to make recommendations on the accrediting of Illinois High Schools. Principal C. P. Briggs, of Rockford, was elected chairman of the meeting. In addition to the nomination of one member of the Commission as provided for by the Constitution of the North Central Association, the principals were asked to name two other men as members to advise with the three regular members of the State Commission.

Principal C. P. Briggs was renominated as the regular member, and Principals William Wallis, of Bloomington, and E. V. Tubbs, of Centralia, were elected as advisory members.

## 2. Friday evening.

(a) A general reception to all members of the Conference was given by the University Faculty at the Woman's Building, 4:30 to 6:30. More than a thousand people attended this reception, which was a very successful affair. Miss Frances Simpson, Assistant Professor of Library Economy, was chairman of the committee having it in charge.

(b) The program of the evening began at 8 P. M. with Professor W. C. Bagley presiding.

The Chairman of the General Conference Committee made some announcements, chief among which were the following committees: Two interlocking committees, one for biology and agriculture, and one for English and foreign languages, including both classical and modern. The function of these committees is to be careful consideration of all correlations existing among the respective subjects as related to good secondary education. The committees named are:

Science: J. L. Pricer, Normal, Chairman.  
W. E. Andrews, Pana.  
L. F. Fulwiler, Mt. Pulaski.

Languages: John D. Fitz-Gerald, University.  
J. Calvin Hanna, Springfield.  
Florence Skeffington, Charleston.

The organization of a new section to be known as the Physical Education Section was announced, with the following executive committee for the year:

Roy N. Fargo, University, Chairman.  
Louise Freer, University  
H. E. Brown, New Trier, Kenilworth.  
L. W. Smith, Harvey.



An unannounced feature of the evening was a greeting from President Edmund J. James, who welcomed the teachers for the University and spoke briefly of the future larger field for high school work in the state. He expressed the belief that the time would soon come when the work now done in the first two years of the University would be provided for by an extension upward of the work of local high schools throughout the state.

The program as announced was a symposium on The Standardization of High Schools. This was presented by the Committee with the desire of bringing before the Conference at this time a brief survey of the different points of view as now existing, and as expressed in discussions from time to time.

Mr. H. L. Terry, High School Inspector for the State Department of Wisconsin, was asked to present the matter from the standpoint of State Department standardization.

Professor J. D. Elliff, High School Visitor for the University of Missouri, spoke from the standpoint of cooperation between Universities and State Departments.

Superintendent J. Stanley Brown, of the Township High School, Joliet, was invited to present the high school point of view.

Dean Kendric C. Babcock, of the University, was requested to review the general principles involved in the problem of standardization.

Following are given, in order of presentation, the papers or abstracts as given by the four speakers.

#### STANDARDIZATION OF HIGH SCHOOLS

H. L. TERRY, MADISON, WISCONSIN

What is meant by the expression "Standardization of High Schools?" To standardize means to reduce to a standard and things are standardized when they are made uniform in respect to various items. There is an establishment of identity. The standard width of railroads is 4 ft. 8½ inches and all of the great railroads of the country are this width. The standard bushel has a capacity of 2150.42 cubic inches and there is no variation from this. The standard high school of this country includes four years of work and this is what we mean when we speak of high schools; when we mean anything else we use a qualifying adjective as a two, three, or six-year high school. Now, when we talk of standardizing high schools do we mean that all shall be practically identical as far as conditions will possibly admit, governed by the same fundamental ideas, meeting certain very clearly defined requirements of administration and subjects taught, or shall there rather be some common purposes, conditions, and results with great freedom of means and methods?

Standardization tends toward fixedness. When things are perfectly standardized any possible change is brought about only with the greatest difficulty. We have been trying for many years to substitute the metric system for our standard system of weights and measures with, as yet, discouraging results. Our illogical and uneconomical standard spelling gives way very slowly to a revision manifestly needed. It would probably be practically impossible to change the width of the railroads of this country even if it could be clearly shown that some other width would be better in every respect.

Complete standardization then practically means the end of change, improvement, progress or growth. Things remain as they are, definitely fixed. High schools offer an excellent illustration. Since the beginning of their existence no school has been considered a real high school unless it prepared for college, and requirements for college entrance have been so extended and definite as to have resulted in a degree of uniformity approaching that of the width of railroads. All high schools have been, until lately, doing practically the same work in the same manner, to the same extent, and with the same purpose—to fit for entrance to colleges largely out of touch with the economics of modern life and ideas. What changes have come about have been mainly through compulsion and against strong opposition. This uniformity is yet true of the great mass of the work in the high schools. Mathematics, Latin, History and some other subjects are, with exceptions here and there, taught as they were generations ago. All attempts to bring them into line with the ideas and demands of today have met with determined resistance. The old time schoolmaster would feel entirely at home in the average class in algebra, geometry, and Latin except that he might be awed by the greatly improved surroundings. He would find the same old subject matter and methods, with the work a little less purposeful perhaps since the practical ends of his day are comparatively less pronounced now. No new purposes in the subjects mentioned, however, have come in to trouble him. The difficulty is not inherent in the subjects. There is not one of them which can not be so vitalized that it will be strictly up-to-date, but original requirements have been followed implicitly until they have become traditional and apparently almost incapable of change. Attempts at improvement have proved so futile that we hear demands that the subjects be made elective or dropped entirely from the course of study and others more in harmony with the spirit of the age be substituted. Of course, these statements do not apply to questions of organization or administration since high schools as such are of so recent origin that there is practically nothing traditional yet except that there must be four years of work based upon eight years of elementary school. Attempted standardization as to length of recitation periods, number of students per teacher, hours in the school day and qualifications of teachers are still subject to change with comparative ease.

The standardization of high schools has two very distinct phases, the one relating to subject matter and methods, and the other to organization and administration; the one dealing with the kernel and the other with the shell. The academic in turn divides into two parts: that which has to do with the old, traditional, time honored subjects and the other with the new material given as courses in community civics, domestic science, manual training, agriculture and the like. The last are so new that they can hardly be said to be fully recognized as yet as integral parts of the system, but rather as subjects in process of development.

The problem accordingly is not merely one of the establishment of new standards, but it is also one of breaking down old ones, a much more difficult and important task. The high school will never do its proper work in a satisfactory manner while the present standards of academic work hold. Vagueness of purpose must give way to intelligent, appreciative effort. Inherent values, meeting modern demands, must be brought out or some of the studies will become obsolete. The blind teaching of mathematics, history and language now so common must be supplanted by treatment which shall appeal to the

understanding of students and the general public alike as important in training for civilized life as it exists now. Young people are not as willing as they were a few years ago to work in school with the thought that somehow, sometime, what they are studying may fit into their lives. To-day reasons are demanded which are definite enough to be clearly understood. The everlasting "why" is a more and more pronounced factor and it will not be answered in terms of formal discipline. The boy must be made to see that his algebra is a tool of operation in mathematics making certain kinds of work and thinking easy, and that his education will be sadly defective without it; his history must lead him continually toward a more definite understanding of existing institutions and a better appreciation of the rights, privileges and duties of American citizenship.

It is not a question of abandonment of the old subjects which have so profoundly influenced thought and action in the past, but which have dropped behind in the general progressive movement in education. They have in them too great possibilities to justify their being neglected, much less dropped from the curriculum.

The magnitude of the undertaking of overcoming the present standards is clearly shown when we note the small gains made in the years since sharp and insistent criticism of high schools and their results began. The old influences of conservatism are still operating powerfully to keep things as they are. In spite of the many declarations of independence by high schools, I cannot help believing that as college entrance requirements have been the most powerful influence in the past in determining the nature of the work in high schools, so are they yet much the strongest single factor and will continue to be so as long as they specifically state the nature and amount of subject matter as the colleges have heretofore done. The number of high school graduates entering college is constantly increasing and the high schools must prepare them to do college work.

The colleges have made many concessions but the difficulty is that in spite of these concessions the old standards of instruction still prevail. High school teachers do not feel free to follow their own ideas even where they feel sure they would gain in efficiency by so doing. There must be, then, such changes and modifications of entrance requirements as to give to those in charge of the work of the high schools much greater freedom in the choice and treatment of subject matter. This in turn involves a rigid inquiry into the justification of the requirements themselves preliminary to any attempts to readjust academic work on the basis of preparation for college; and the colleges can help immensely in this.

Are the present demands necessary for successful college work? How much of the history and English literature now specified is made use of in the college classes? There should be thorough research work to aid in knowing just what is really needed and what is not. If direct use is not made of what has been demanded certainly substitutions are possible and greater freedom may be permitted. If the colleges can do as well with a preparation based upon an entirely different line of studies or a radically different treatment of those already offered they have no right to impose a certain kind and refuse another. Is it not possible that a certain amount of work along any line will fit for college? In other words, how much uniformity in high schools is absolutely essential? A certain amount is manifestly necessary. The term high school must mean something definite and something which shall be practically the same everywhere in the country. At the same time the fact I have already stated should never be lost to sight that standardization means a hinderance to change and growth and may even bring about stagnation, and that the more perfect it is the greater the hinderance. It is justifiable only when it serves some vital purpose and its advantages clearly outweigh its many objectionable features. We are not ready yet to say what a high school shall be. There never



before was a time when ideas of education were so unsettled and uncertain. We are living in a wonderful age of growth and change and future conditions cannot be predicted with any degree of certainty. Besides high schools are a new institution, especially if we count from the time when they began to think for themselves. It is not easy to fix wisely even the proper length of the high school course or to say that we shall not continue the present standard of four years. Much less can we safely assert that a certain type of history or of other subjects shall be accepted and no other, or that four books of Caesar must be read in the second year of the course.

Again, what shall be done with the new subjects such as community civics, manual training and agriculture? They are looked at with disfavor by many who do not believe them to be proper subjects to bring out educational values such as to justify recognition with the old and accepted studies. History of high school education can give us warning here. It is not very far back to the time when science and a definite study of English were introduced into our high schools. They were at once seized upon by the specialists in the higher institutions and summarily standardized. The days of the compound microscope in botany were ushered in, the period of discovery and research based largely on quantitative experiments in physics came in its full glory, and college entrance requirements in English were promulgated; and our high schools have been trying to do college work ever since. Even now we hear the cry, generally from weak teachers and from people lacking in power to think for themselves, that the same sort of thing shall be done for agriculture, domestic science and the other branches which have not yet made a good deep rut; and there is great danger that history will repeat itself. It almost certainly will if the power to do so is given to college specialists as was the case with the science and English. I do not at all mean this as a fling at specialists. They are absolutely necessary in their place but that place is not to prescribe what shall be done in schools as far removed from them as are the high schools. The very nature of their type of work unfits them to appreciate the conditions under which high school instruction is given.

In view of all this then, it would seem that there are certain propositions which should underlie any present attempts to formulate even an approximate definition of a high school. Some of these may be briefly summarized as follows:

1. The high school is in a stage of rapid development, and should be allowed great freedom for variation, growth and change of ideas. In other words, permanent standardization should be discountenanced and nothing should be imposed to hinder a progressive development. Any requirements should be in broad terms of maxima or minima or a certain number of units, or others allowing flexibility.
2. A much greater freedom of choice and treatment of subject matter of the old line studies should be strongly encouraged with a view to bringing out inherent values applicable to the conditions of life to-day. That is, present standardization should be broken down.
3. That the new industrial and other subjects are still in the experimental stage and that only very general statements in regard to the exact nature of their work can as yet safely be made. There is now a very gratifying natural growth going on which is tending toward all the standardization desirable.
4. That standards of organization, administration, and physical conditions can more easily be established and more easily be modified than can be done in the academic work and through such standards a sufficient unity for all practical purposes can be obtained. Even these must be carefully phrased in terms which do not imply unchanging rigidity.

Finally, any scheme of standardization of high schools or any other schools must fully recognize the fact that to accumulate knowledge is only one of the ends of school education; that it is far more important that the student shall

have a determined desire for knowledge; that he shall be given a power to use books and other sources of knowledge; that he shall be trained into habits of initiative and self-control; and above all that he shall know and exercise right ethical relations in life. Artificial restrictions which seriously hamper the acquirement of these ends should not be tolerated.

#### STANDARDIZATION OF HIGH SCHOOL

J. Stanley Brown, Joliet, Illinois

For the purposes of this discussion we shall regard Standardization of High Schools as the process of securing a standard which has been fixed by authority, by custom, or by general consent as a rule for the measure of value.

There are three distinct sources of authority, each operating in some measure of independence. One proceeds from the State University; another from the North Central Association of Schools and Colleges, a voluntary organization whose purpose is to secure a closer relationship between the schools and the colleges. The third comes from the State Department of Education in Springfield.

The material upon which these forces expend their efforts may be called the school building, the equipment in library and laboratory, in playgrounds, gymnasium, in the character of heating, ventilation and water supply, sanitation, lighting of rooms, the length and use of the school period, the school day, the school year, and other things which may be regarded as somewhat fixed, mechanical and materialistic, non-personal, tangible, concrete, somewhat invariable. In addition to these things on the one side, there is the consideration of the teacher, his preparation for work, his conduct of the recitation, his personality, the influence which he has on his pupils. This second group of considerations are somewhat intangible, somewhat abstract, somewhat fluidic and changeable, keenly personal, and are always variable.

Touching the purposes of this discussion, the field of operation of these first two sources of authority is confined to such secondary schools in the state, and only such, as are able to meet satisfactorily the standards of college admissions set up. This means that about half of all the institutions in the secondary group are affected by this relationship. It means that the University voluntarily sets about doing this work for the sake of the University primarily, and that it is not concerned primarily with the high schools of the state unable for any cause to meet the standards set up by the University and by the North Central Association of Schools and Colleges. It means also that the stimulation of effort to meet the conditions of a standard set up is great enough to bring into this standardized group of schools a larger and larger number because of the great anxiety to get into the group. It means that Boards of Education are everywhere expending more money to make better buildings, to make better laboratories, to make better libraries, to employ better teachers in order to meet the conditions set up by the standard of the State University.

It cannot be charged that the standardization scheme is wholly a selfish scheme because its altruistic features are plainly seen in the betterment of the schools on the standard list and the anxiety of those off the list to secure recognition and placement on the list. Any standardization scheme put into practice by an authority purely without the institution has a tendency to become fixed, somewhat wooden, and occasionally dead, and there is some inclination to look upon the attainment of a certain goal when placing on the list has been secured. But the whole standardization scheme would fail, even if in these purely mechanical, concrete, and materialistic qualities, the school to which these were applied remained unchanged.

It is comparatively easy to find a measuring unit by which the first group of considerations named may receive an accurate determination. It is possible with this first group of considerations to apply a standard, but in the second

group of considerations, which we have entitled the variable, the intangible, the abstract, the fluidic, the inconstant and psychic, it is quite impossible at present to apply a standard completely because there is no measuring unit. There are certain requirements under the second group of considerations like "graduation from a certain type of college" and "having so many hours of work in education," and "teaching so many periods a day" and "having a certain time for recitations." But the thing which we call "personality" in the teacher, the thing which can be most highly appreciated, but not yet measured, is half of the most valuable possessions which an individual teacher has, and the number of such rare individuals connected with the institutions determines more largely than all other factors the judgment which is passed upon the institution. It is regrettable that the State University has to confine its efforts so very largely to a statistical report made out at periods of three or five years apart, and that the judgment which is passed on the secondary school has to be confined so largely to the uncensored material sent by the Principal or Superintendent to the High School Visitor. If this same university had twenty men whose entire time were spent with all the high schools of the state and with as much thought of helping the high school directly as of helping the University directly or indirectly, it would be possible for the relations between these two co-operating groups to be made immeasurably more valuable than under our present conditions. It is utterly out of the question for one man to spend half his time visiting four or five hundred schools a triennium and then to expect the kind of intimate and close and personal knowledge of the schools which ought to be the right of the universities to secure. More men and more money spent by the university in this field will brighten the situation. You can't bail out Lake Michigan by using a tin cup. You can standardize things but you can't standardize folks.

A measuring unit must comprehend the qualities of the thing which it measures. Wood is measured by wood, steel is judged by steel, water is judged by water, folks have to be judged by folks, and up to the present there isn't a standard man or woman in or out of the teaching profession.

Standardization of high schools in Illinois is both voluntary and presumptive. The custom of doing so and the general consent to the work of the standardization has been developed by the State University without any legitimate authority. An inquiry into the work that has been accomplished will reveal unquestioned good to the schools. There is always a chance for a difference of opinion when we attempt to make a hard and fast line between a local community given certain legal rights and a larger community exercising certain presumptive rights. Both are working in the state, under the state, in the broadest sense, and both are operating from the same taxing power. The Constitution provides for a State Department of Education. The Legislature later provided for a State University and within recent years the same state body has been exceedingly generous in the appropriation of money for the State University. The Legislative action providing for a High School Inspector as a part of the Department of Education of the state gives a legal status and not a voluntary and presumptive status to the work of assisting the high schools of the state through the State Department of Education. In this case, as in the case of the State University, it is clear that no adequate or even acceptable work may be done by direct contact with the schools unless a much more extended provision in the number of men is made for this work, and the work of the State Department of Education, as the work of the State University in this same field, must depend very largely on statistical reports for information concerning the hundreds of high schools in the state which cannot be visited by any one individual no matter with what educational power he may be connected.

The thing which appeals to me as of greatest significance in this division of authority and in this possibility of duplication of work, is that since all of the public schools of the state receive their support from the state in one way and



another, and since in this twentieth century we are learning more of the meaning of "co-operation" than we have ever yet learned, we ought to lay aside all narrowness and all arbitrary or ill-conceived opinions and bring together all of the public educational forces of the state to bear on one point in order to protect, enlarge, and develop to the greatest possibility all the public educational institutions of the state. It is not the business of the creature to say to the Creator: "Why hast thou made me thus?" It is the business of the creature to respect this Creator and to recognize that his existence is dependent on his Creator.

With all the contending forces at work in the state, some whose purpose is clearly to interfere with or destroy, and others whose purposes are dwarfed or shrivelled or perverted because of the wish for aggrandizement and institutional exploitation, it behooves the whole body to keep its feet on the ground, to keep its head from being turned, and to keep its eyes on the stars rather than on the under-world. We must be patient, respectful, and sympathetic—we must work together.

The local community, which has been saying: "We want the right and we have the right to run our own affairs regardless of any force without it in the state" must be made to understand that it is only a part of a bigger whole and that the bigger whole must be respected, must be kept uninjured, must be permitted to exercise a bigger influence and a more sagacious authority than it is possible for the smaller part, regardless of its rights and privileges, to exercise.

We must remember that institutions in the twentieth century, all of which are supported from the same taxing body, must not become combative of one another and must not become competitors of one another. As soon might we say that one organ of the body could revolt against all the other organs of the body and not affect the general health of the individual, as to say that in the state where all of these public educational institutions reside, one may be at enmity with another, one may look with suspicion on another and not affect the whole scheme of the state for the education of its people.

Let us acknowledge and enjoy all our rights, privileges, and duties, but in their acknowledgement and enjoyment let us not forget that other citizens of the state must have these same things respected by us.

"Co-operation" is the word of the hour.

"It is not the guns and the armaments and the money that they can pay,  
It is close co-operation that is going to win the day;  
It is not the individual nor the army as a whole,  
But it is the everlasting team work of every bloomin' soul."

Another phase of co-operation may be found between the sources of authority, which we have mentioned, and the high schools themselves. In order that "co-operation" may be complete and most beneficial, these two parties must feel that they work with mutual confidence and not with mutual suspicion; that their efforts are not primarily to be on probation; that all their dealings must be face to face in audible tones and not in whispers; that tentative relations shall be clearly defined so that no one may be in doubt about the meaning of tentative, and that a conditional agreement shall state completely and plainly the qualifications which compose the condition. If a report is subject to revision, to examination and conference by an additional body or an additional authority, external to the two most directly concerned, the revisions and comments and final judgments should be clearly and unequivocally stated. The elements of fairness and honesty and openness in procedure should be supreme in our efforts at real co-operation. All points upon which there is a chance for disagreement and difference of opinion should be sympathetically and openly discussed by both parties immediately concerned. The community point of view, which may involve emphasis on one particular phase of work, ought to be thoroughly familiar to both of the people concerned, with the realization of a right standard.

The inevitable changes which come from semester to semester, if not at more frequent intervals, may be looked upon as evidence of life and growth and development and not as a spasmodic effort to violate some fixed requirement or some immutable agreement.

Finally, the work of standardization ought to be performed quite as largely by one of the parties as by the other. I mean, that where there is a question of opinion or a question of dispute, there ought to be an equal representation of both high school and college, and a fair discussion with no intention of imposing an opinion as an arbitrary fact by either party. Mutual confidence will exist when real visitation, inspection, and supervision are made to apply to the whole chain of education from the top to the bottom and from the bottom to the top. We shall never have just the right understandings if our efforts at standardization are supremely concentrated on one spot, not very far from the middle of this chain. It is quite possible that the links in this middle spot in the chain are weaker than they are at either of the extremes. It is doubtless true that in this middle of the chain, represented by the secondary school period, there is much more inclination to look favorably upon the benefits resulting from standardization than there is on the part of any of the other links in the chain. As an educational theory, it is quite as important to determine the qualifications of teachers by some authorized standard, the character of the teaching by a similar method, the kind of equipment, etc., in the case of institutions supported by taxation and ranking among the upper links of this chain, or in other institutions ranking among the lower links of the chain, as it is that such visitation, examination, supervision, and standardization shall be applied to the middle links of the chain.

By such a scheme as we have proposed we shall secure a real system of education in Illinois and we shall regard one link in the chain as no less important than the other, and we will not regard the defective spots in one particular part of the chain only. By such a scheme we will have in the state a unified system of public education, and all the links in this chain purposely related to one another and all of them justifying our first and last claims,—that education is the function of the state.

#### TO WHAT EDUCATIONAL AGENCY OR AUTHORITY SHALL BE ASSIGNED THE DIRECTION AND LEADERSHIP IN THE ACCREDITING, STANDARDIZING, AND UPBUILDING OF THE HIGH SCHOOLS?

J. D. Elliff, Columbia, Missouri

The Public High School is the latest and best expression of the growing principle of democracy which has been finding a fuller and freer expression in our country since the time of Franklin and Jefferson. This fact is the real explanation of its almost universal popularity and its phenomenal growth. Democracy finds expression in equalizing opportunity, and is always characterized by co-operative effort. When, through intelligent co-operative effort, we have secured equal educational opportunity for all our people, democracy will have fulfilled its most important function. That we shall ultimately realize this ideal is best shown by the progress we have made. The public or free secondary school is a comparatively new institution, the last of our great social institutions to take definite place, form, and function. In organization, government, support, program of studies, curricula, courses of study, equipment, methods of teaching, and in its relation to other institutions, the high school is so unlike the old grammar school of the seventeenth century and the academy of the eighteenth and first half of the nineteenth, than the connection is little more than chronological.

One of our eminent educators said recently that the development of the high school is the most remarkable feature of educational progress during the

century. The statement will hold for any century and any country, for the world has witnessed nothing like it. In 1860 there were very few free high schools,—not more than sixty-five in the United States; now there are more than 12,000. Since 1890, the enrollment has increased from 200,000 to 1,200,000, and some states have made only a good beginning! The development is expressed not only in numbers but in the quantity and quality of the work done in the schools, which are now reaching the masses and are adapting their work to the needs of the people in a very vital and significant way. No longer is the "common school" sufficient. Most people now think of the education of their children in terms of a four-year high school, with the additional opportunity, at least, for a college education.

That the elementary school offers insufficient preparation for any sort of efficient citizenship is shown by the fact that every state has made legal provision for free high schools. Education, elementary, secondary, and higher, is fast becoming a state function, in fact as well as in theory. No longer is the way to a higher education a toll road which only a select few may follow, but a broad free highway extending to all parts of the commonwealth.

Coming as it did in response to a strongly felt, but often poorly defined, social need, being new and democratic as it is, the high school is still in the developmental stage. It has made its way at every step in opposition to strong conservative forces, and has shown an adaptability to changing conditions, a facility of adjustment unsurpassed by any other institution.

How to organize and administer this great and growing institution so as to secure its maximum benefits, how to give each community just the kind of school that best meets its needs, how to give each pupil the kind and amount of education he needs, has been, is, an must continue to be one of the most important administrative problems in any state. In the solution of any social problem, and more especially in so important and complex a problem as this, it is absolutely essential that we have thoroughly responsible expert leadership. This brings us to the gist of the matter: to what educational agency or authority, legal or otherwise, shall be assigned the direction and leadership in the accrediting, standardizing, and upbuilding of the high schools? This question has been answered in several different ways by different states. Some states have answered the question in different ways at different times. At present there are no fewer than twelve different answers to this question. On the basis of control and method of appointment of inspectors these answers may be classified as follows:

First—By high school board, as in Minnesota.

Second—By state board of education, as in S. Carolina and Kansas.

Third—By a state commissioner, as in New Jersey.

Fourth—By state superintendent, as in Washington.

Fifth—By state board and state superintendent, as in Indiana, where the inspectors are nominated by the superintendent and confirmed by the board.

Sixth—By the state superintendent and the heads of different institutions, as in Ohio, where the inspectors are nominated by the heads of the institutions and confirmed by the state superintendent.

Seventh—By the state university, as in Oklahoma.

Eighth—By the university and the state department jointly, as in Florida.

Ninth—By the state superintendent acting *ex-officio* as inspector, as in South Dakota.

Tenth—By independent institutions, as Johns Hopkins and Washington universities.

Eleventh—By high school commission, as in Alabama.

Twelfth—By a commissioner and a superintendent who serve voluntarily, as in Oregon.



In these twelve answers six distinct types of control are represented: namely, control by the university; by the state department; by the university and state department acting jointly; by the state board of education; by independent institutions, and by special high school boards.

To trace the history of the accrediting system in order to find out just how and why these different types came to be, would be an interesting and profitable study, but the time allowed to this paper will permit only the briefest possible summary.

The accrediting system grew out of the reorganization of the state school systems, following the period of the Civil War. Beginning with this period, the high school became a college preparatory school and thus took the place of the old academy. Being an integral part of the state school system, the high school is organically related to the elementary school below and to the university above. The accrediting system grew out of this relationship. Beginning with the University of Michigan in 1871, the movement spread rapidly, and at the present time, the practice of admitting to the university without examination the graduates of duly accredited high schools is well-nigh universal. In order to account for so many plans of accrediting, it is only necessary to keep in mind the fact that we have no national system of education. The national government, having by liberal grants of land and money, made possible a good system of schools in each state, left the states free to work out their own systems, to use or squander their inheritance as they might. As a result we have many different state systems. Even in so fundamentally important matter as the constitutional provision for education we find the widest possible variation. These constitutional limitations and consequent legal enactments are, in the main, responsible for our different administrative systems including the different systems of accrediting.

So long as the original aim of the movement was the co-ordination and the general betterment of the school system, there was little or no excuse for interference with the aim of accrediting as worked out by the university and its affiliated schools. When, however, the state began to give extra state aid for certain courses, and conditioned this aid upon certain definite and technical requirements, state inspection in some states became necessary. In every case, in so far as I know, state inspection was at first for some particular purpose and in no case was it primarily for the general purpose of accrediting. In all our discussions, we must keep in mind the fact that the public high school and the state university are integral parts of the state school system. The relationship existing between these two parts of the system is close and vital, and must never be lost sight of. To sever this relationship, as has been attempted in some states, would be the most serious blow that could possibly be inflicted upon higher education.

Most of the plans for accrediting have been in operation long enough to enable us to evaluate them. We are, I believe, in the light of our experience, quite ready and able to state definitely certain minimum essentials of any plan worthy of serious consideration. Some very careful studies of the work of inspection and standardization in all of the states have led me to believe that any plan worthy of serious consideration should meet the following requirements:

First, the primary aim must be the betterment of schools and school conditions. A study of the laws and regulations governing inspection in the different states shows a very strong tendency to substitute some narrow aim or aims and lose sight of the larger problem of school betterment. Inspection for a particular purpose, e.g., the distribution of state funds, the development of some special subject, or the enforcement of text book laws, is entirely proper and often necessary, but it must not be considered the equivalent of, or a substitution for, the thorough-going sympathetic inspection of the school as a whole. Second, it must be free from any sort of political or religious

bias or control. I need not argue this proposition; it is self-evident. This is the weakest place in many state systems where the state superintendent is a party man elected on a party ticket. My own state is an excellent illustration of this weakness. I hope the time will come when the entire free school system will be placed beyond the reach of educational demagogues, designing politicians, and party politics. Third, it must command the respect, the confidence, and the co-operation of all concerned. Fourth, it must be state-wide. Fifth, it must provide a sufficient number of scholarly, trained men of successful experience to do the work. These men should be selected and retained solely on the basis of their fitness for the work.

If we should measure existing systems by these simple standards, we should find that many of them would "fail to pass inspection". I am confident that we shall ultimately work out a plan in all the states that will meet these essential requirements. It is a problem for the school men themselves. So long as we allow the educational demagogue and the ward politician to do our thinking for us, no improvement will be possible. From any point of view, there is no real excuse for the confusion existing in many states. Until such time as we can work out something approximately the ideal system, we must make the best of the existing situation.

The present plan of accrediting in Missouri is, I think, an excellent illustration of what may be accomplished under adverse conditions. In Missouri, as in many other states, the university took the initiative in the accrediting of schools, and was for many years the only accrediting agency. A few years ago a group of disgruntled school men and designing politicians secured the passage of a law giving the state superintendent the authority to classify and inspect schools and providing that all work done in classified high schools should be accepted for entrance to and classification in any state school. At the time of the passage of the law the state was giving no special state aid and there was no sufficient reason why the state should undertake the work. Not until the state began to give special aid for specific purposes did the state superintendent make any effort to comply with the law. Our present plan is one of close co-operation and assistance. Our standards and requirements are identical. The state requirements for a first-class school are the University requirements for a fully accredited school. We send the state department a copy of our report on each school visited and the state department sends us copies of their reports. Each gives full faith and credit to the work of the other. The university inspector and the state inspectors meet frequently as a board, go over the reports in detail and discuss all matters of mutual interest. This plan, with certain modifications, has been in operation a little more than four years and seems to be giving excellent satisfaction. Certainly it has the unqualified approval of the high schools.

The present plan is of course a sort of gentlemen's agreement, and while it may be repudiated by any incoming state superintendent, I think it will hold until we can get a new state constitution and thus get the state department out of party politics.

The one great weakness in our state system of inspection is that the inspectors are members of the political party in power and their tenure is short and insecure. We have had and now have some excellent state inspectors, but we can not keep them. By the time they have reached their maximum efficiency they must give place to others.

In any system the tenure of position of the inspector must be secure. The splendid work of such men as Whitney of Michigan, Aiton of Minnesota, Henderson of Texas, and Hollister of Illinois is conclusive evidence of this fact.

In conclusion I should perhaps try to answer the question as stated in the title of this paper: *To what educational agency or authority shall be assigned the direction and leadership in the accrediting, standardization, and upbuilding of the high schools?*

It is my opinion, based upon a close study and careful observation of the work of accrediting in all the states of the North Central Association territory, that the plan of university control is best. I believe that any impartial and thoro study of the matter will convince the most skeptical that the states having this system have secured the best results.

In states where constitutional restrictions, legislative enactments, or other sufficient reasons make university control impracticable, I should favor a board of three members:

1. The president of the State University, or some member of the faculty designated by the president.
2. The state superintendent of public schools, or some person designated by him.
3. A principal of an accredited school to be selected by the principals of the accredited schools.

To such a board, representing as it would, all interests concerned, could safely be entrusted the determination of standards, the appointment and pay of inspectors, and all other administrative features of an ideal plan.

## STANDARDIZATION OF HIGH SCHOOLS

### (Summary of Discussion)

K. C. Babcock, Dean of the College of Liberal Arts and Sciences,

University of Illinois

The three papers which have just been presented give such an excellent summary of the development and present status of the movement to standardize high school organization and instruction that further discussion of certain phases of this movement is unnecessary. It is clear that the organization of the process of standardization will not vary materially whether the emphasis in the process is laid upon organization and administration, upon materials and contents of curricula, upon adjustment of the school to its community, or upon the disposition of the product. At best, standardization is a railroad track or an engine, and not the train itself. One may standardize track and motive power, and even cars themselves, but hardly freight or passengers.

Standardization in some form is inevitable; it is already here and it is here to stay. The mobility of American population and the necessity for reducing to a minimum waste in cases of transplantation of students require that standards of organization and curricula shall be fairly definite and public, even though they lack uniformity. As a matter of fact, standardization does not mean uniformity. The standards required for a classical high school in terms of content of courses, equipment, and relation to the disposition of the product will be decidedly different from those of a mechanic arts or business high school. The public has a right to know equally well regarding all these types of schools. Standardization has progressed much farther for the older type of high schools, those retaining the traditional liberalized curricula, than it has for the newer type of vocationalized or polytechnic high schools in which artisanship, business practice, household arts, and agriculture have supplanted Greek, advanced mathematics, and modern languages. In the extreme form of the newer high schools the standard of the shop or of the factory, concerned with the skill and wage-earning capacity of the student, is necessarily different from the standard determined in relation to the work of a higher institution.

Fundamentally, all the types of high school work must be tested by one standard—namely, the capacity of each to energize to the maximum the group of students for which it is designed. There are obvious limits to diversifica-



tion of adaptation, since the material, the boys and girls of high school age, will not be greatly different in different communities, but standards established for one type of school will not be equally applicable to all other types. The establishment of standards and the method of applying these standards to schools of a given State are matters of vital concern, not merely to those dealing with the product of the present, but to all who are concerned with the progressive adaptation of high schools to the enlarging needs of modern urban and rural communities.

Whatever the agency of standardization, whether it be voluntary, as in the case of the schools tested by the North Central Association of Colleges and Secondary Schools, or compulsory, under the direction of a State institution or a State office or a State board, the ideal agency has three characteristics. It must be simple, so that its wide application to varying requirements shall be easy and its machinery readily accessible for new examinations or for reviews of previous estimates; it must be unified, so that the judgment of the State shall be expressed with one authoritative voice, which shall be at once sympathetic and decisive; and it must be spiritualized, so that account may be taken of the subtler values of organization and work which far outweigh in importance the more easily measured material equipment, or income, or printable facts of age, training, and experience of the teaching staff.

So long as a large percentage of the students who go out of the high schools enter some higher institution for general or professional or technological training, the agency for establishing and enforcing standards must be under the control or organically connected with the State's higher educational institutions. No State can, in the long run, wisely require one of its institutions to abdicate the right to determine the standard of admission to its courses. It follows, necessarily, that if the principle of unity is to be observed, the judgment of such a State institution as applied to the product of a standardized high school must be a decisive element, but certainly not the only element, in determining the application of announced standards to the high school in question. Put in other terms, no State university or State college can afford to consider turning over to a body entirely outside itself the determination of the students it shall admit on certificate, unless it is willing to suffer a progressive deterioration of its standards.

### 3. Saturday morning.

The third general session opened at 9 A. M. Saturday, with Principal Henry E. Brown, New Trier Township High School, presiding.

The first part of the morning was given to brief reports from the section meetings of Friday on "What I got out of our section meeting." The reports given were most excellent, and readily furnished one of the most interesting features of the Conference. Following are the names of those who reported, by sections. It is a matter of regret that these reports are not available for publication.

Administrative, Principal L. W. Smith, Harvey.

Agricultural, Winfield Scott, Normal.

Biology, C. P. Shideler, Joliet.

Classics, Alice E. Shurtleff, Centralia.

Commercial, Guy M. Pelton, Evanston.

County Superintendents and Village Principals, County Superintendent C. H. Watts, Urbana.

Domestic Science, Grace Hinchcliff, DeKalb.  
 English, Kathleen Roberts, Urbana.  
 Geography, Margaret B. Fuller, Centralia.  
 Manual Arts, L. A. Tuggle (volunteer), Danville.  
 Mathematics, Jessie D. Brakensiek, Quincy.  
 Modern Language, O. L. Langhanke, Quincy.  
 Music, Clara Renfrew, Bement.  
 Physical Science, Professor F. D. Barber, Normal.  
 Social Science, Laura F. Ulrick, New Trier Township.

The chief business items of the morning were:

(1) Report from the North Central Principals of their selection of representatives for the accrediting commission of the state.

(2) Resolutions. The following resolutions, coming from a committee of the Administrative Section, were read and unanimously adopted:

1. Resolved, that the legislative committee of the State Teachers' Association be earnestly requested to recommend to the legislature that steps be taken at the earliest possible moment to legalize the township high school districts organized under the Act of 1911.
2. Resolved, that we recommend that remedial legislation be enacted regarding the districting of the State for high school purposes, and providing free tuition to pupils attending high schools.

Next came the address of the morning by Professor F. D. Crawshaw, University of Wisconsin, on the subject "Vocational Education as an Element in Education for a Democracy." Professor Crawshaw spoke as follows:

In entering upon this discussion I am sorely reminded of the old saying, "One may as well die for a sheep as a lamb." I realize that I am taking a large contract even to endeavor to show the relation between Vocational Education and what in the past has been spoken of as General Education. I also realize that no one as yet, so far as I have been able to learn, has settled the question of what is general or what is vocational education. In fact there is no common agreement as to a definition of education, much less of any particular kind of education, if indeed there are different kinds of Simon pure education.

I approach my problem, therefore, with the knowledge of having chosen a debatable field for my discussion and likewise with the conviction that I have the advantage over some who have preceded me in the same field, because I enter it not as a trained philosopher but rather as a plain student of education and a nonconformant to any particular educational doctrine or set of doctrines.

I take it there is no greater problem yet unsolved and giving promise of remaining without solution for an unlimited time than the problem of education. The very fact that it is unsolved makes it a great problem if we will but think that the lack of solution is due to an inability to solve rather than to a lack of effort to solve. Throughout all the past ages the leading philosophers and pedagogs have sought an answer to the question, "What is Education?" The search has been made because as representative leaders of thought these individuals have endeavored to direct their fellows in the way of living.

But one's standard regarding life and how best to make life possible depends upon individual *aim* and *purpose*. And so education, which is the life building process, no matter what one's theories may be regarding it, is an individual matter depending upon social, economic, religious and political ideals.

To be sure there may be some rather generally accepted educational philosophy for any particular period in history. If so it is because some individual view dominates that of society or because the majority of individuals for the particular period of time come to a general agreement in their belief. In either case common opinion is formed and history records the majority rather than the minority rule in registering public opinion.

For example, the meaning of education for different historical periods is expressed as follows:

"The Hebrews sought morality and religion through education; the Athenians aimed at ideal culture; the Spartans sought physical power; the Romans, law, oratory, and military prowess; the church in the Middle Ages, preparation for a future state; while modern nations have sought a variety of ends combining many of the ancient ideals with modern needs." (Quotation from *Learning to Earn*, by Lapp and Mate.) Getting a perspective of the past by such an analysis enables one to classify education chronologically in three divisions:

I—Education for Knowledge.

II—Education for Mental Training.

III—Education as a Life Work.

In the name given to the first division we find the shibboleth used by practically all philosophers up to the time of Martin Luther and John Amos Comenius. It represents the dominant note in education up to the time of the great educational reformers or approximately up to the beginning of the sixteenth century. Education for knowledge means possession by appropriation, selfish acquirement, individual holding. The school which seeks to promote growth according to this meaning of education pours into its students the results of another's labor without permitting them to work for what they get. It not only hinders but it positively forbids self-activity and initiative in the sense in which these terms are used today. Defining education in terms of the knowledge one possesses is describing a process of filling a receptacle. Both during and after the filling process there is no vital relation established between the receptacle and its contents. It is assumed that the receptacle can hold one substance as well as another. This may be true of inanimate receptacles but not of the class of animate ones made up of boys and girls. Indeed, the conception of education which holds that education is the process of getting knowledge or the acquirement of knowledge is to be likened to the filling of old wine skins with new wine. The old skins may burst as the scriptures suggest, but worse yet, as suggested by a recent book on education, when the educational analogy is used, the old wine skins are unsanitary, they contain germs of decay.

Such a viewpoint of education is not associated with growth and education is growth viewed from one point or another. As Prof. Earnest Carrall Moore of Harvard University says in his most estimable book, entitled "What



is Education?" "Knowledge getting is not copying but it is constructing. Other people's experiences exist for us only in so far as we can put ourselves in their places."

I have ventured the statement that Education is *growth* viewed from one standpoint or another. Those who are disciples of Plato and Aristotle and others of their school even down to the time of some quite recent writers on education including such men as Ex-President Taft, hold the opinion that education is for mental training. This class constitutes our second chronological group. They are our disciplinarians. They believe, not so much in what is taught or what knowledge is acquired, but chiefly in *how* it is taught or acquired. With them it is the element of *cultivation*. The fact that the mind is trained is all sufficient. The school which seeks to promote growth according to this meaning of education does so by separating *processes* from *content*. When this is done meaning is lost because the things with which we are concerned and in which we must use method are those which give us *meaning*, out of *personal experiences*. Some one has said, "We shall not learn to think clearly about education until we cease to becloud ourselves with the word discipline." Education is not disciplining the mind that it may some day be prepared to grasp some unknown and entirely unlooked for problem. Rather it is the continual working with problems which have different but vital relations. When viewed in this way we can not say that there are no new problems. We can only say that what we call new problems are old ones reclothed. It is the relationship which counts. The context and the method cannot be separated in an individual world-building process which is one of individual experiences out of which comes meaning or awareness.

Method or the process in mental training has a definite and valuable place in education but it is not the goal of education, neither is it that part of education which puts one in possession of concepts or the tools with which new problems may of necessity be solved. It does not give experience out of which there comes meaning and it never can until it is linked up with the context with which it is naturally associated. Method in any educational process may be likened to organization in business. Organization is invaluable when coupled with the facts of business, but taken alone it is the machine which has no work to perform because there is no material which is available to feed the machine. In school work method is the language by means of which concepts may be formed; but no amount of language will give meaning, because language merely enables us to work with experiences; it is not a substitute for them.

We are often told in this age, when the emphasis seems to be placed upon the material things of life, that results count. This is a common expression in the business world and it is being appropriated by those of us who are engaged in the business of education. The teacher is instructed by the supervisor or the superintendent to get results. The supervising officer may say: This or that is a good method but you must adapt it according to your own individual abilities to get results. The original method of its adaptation is therefore valuable only as a means of securing the desired standard in terms of individual pupil-meaning gotten out of individual pupil experiences. It is valuable chiefly as a means of selecting studies and creating interest in them to secure the results of individual and social service. Here again we have the method and the context associated and we are forced to the opinion that education, so far as the school is concerned, is the process of continuing previous experiences and reshaping them through reflection into a form for social utility.

Education looked at in this light is defined as it was by Mathew Arnold as efficiency. So it is; but it is even more than this, for the reshaping of experiences for the sake of social utility does not mean merely the evolutionary process of adjustment to environment. It means fitting the individual to his environment but it means, likewise, making him keep up to his environ-

ment which is ever changing. It means readjustment quite as much as it does adjustment. This readjustment as we all know is a large task. It involves both the environment which is forced upon us, the social environment, and it means individual capacity, which may be regarded as the individual environment.

We naturally arrive then at a point where we can consider the term democratic education. First shall we ask what it does not mean? Certainly not education for knowledge for such a view gives us only the husk by which as parasites we may presume to take an active part in the affairs of the world but cannot actually participate because we have only that which someone else has given us. Neither will the disciplinarian's viewpoint satisfy because then education deals only with the mechanics of living; the process of dealing with life problems, but as it were in a vacuum, not in the free living air. No, democratic education cannot mean either of these taken separately. But may it not mean both of them taken together? If we will discard the viewpoint of education as held by both those who have placed the emphasis simply upon knowledge getting, and those who have placed the emphasis simply upon the process or the mental training; and likewise if we will banish from our minds the idea of Aristotle, expressed in his statement, "Occupations are divided into liberal and illiberal and to young children should be imparted only such kinds of knowledge as will be useful to them without vulgarizing them," we shall be able to get meaning out of democratic education, or education for all the people.

Democratic education is the opposite to aristocratic education. It does not mean a storehouse of knowledge, neither does it mean a genius ability by virtue of which trained intellect may meet and solve ever widening and enlarging daily problems of human life in a superhuman way or thru the wiles of manipulation. Democratic education is neither stacking the cards nor juggling them; it is playing the game whether the game be called by one name or another as long as it is one which is played fairly and in the open and with a definite aim and purpose. As Prof. John Dewey says in his, *The School of Tomorrow*, "We each live in a social world where every act and word is bound up with the acts and words of others. Liberty, then, cannot sacrifice the interests of others to Caprice." Again he says, "One of the greatest reforms that can come in education is that teachers see to it that children should not be allowed to study without first having a clear notion as to just what it is they are undertaking to do," and again; "The teacher must have a purpose for each study and the student must have a *general* aim in pursuing it and a *specific* aim to make possible the studying of each lesson."

Democratic Education then is not general except in so far as it offers general or universal opportunity for each and every human being to adjust and readjust himself to lifegiving problems. It is the education which couples a knowledge of what is to be done with a power to do it. It uses method with knowledge or facts to produce a new individual world through the meaning which comes out of experiences. Psychology has defined itself as the study of behavior. Education then is the training of the student to profitable behavior.

Hammerton writes, "Have you ever observed that we pay more attention to a wise passage when it is quoted than when we read it in the original author?" Acting upon this suggestion I have quoted verbatim of the authors to whom I am indebted for the point of view which I am attempting to express. I again quote from Prof. Moore a statement which it seems to me conveys the true idea of democratic education and suggests emphatically the means of securing it. He says, "One who would learn anything must put himself in the way of learning it. He must do that which will make him feel the problem. If he once gets that, his mind will work out the answer, but if he goes about getting answers to questions which he has never asked and solutions for problems which he has never raised, he will be performing lip service to knowledge, and instead of fitting himself by getting a rich and full experience he will be engaged in unfitting himself and unfitting those who give and take with him."

*Democratic Education is Real Education.*

All real education is liberal for all real education establishes the truth between the known and the unknown, the action and the reaction. It gives freedom of individual choice to test ones impulses and tendencies in his own world of things and to discover their character. By this means only can the individual make his possible powers known and effective and by this means only can sagacity advance because, in the last analysis, society makes for advanced civilization only as the individual builds his world and uses what he discovers to discard or to use, that both he and others may be benefitted.

Democratic Education cannot deal with individuals in the bulk, else only an inferior or an average society will be reproduced. Democratic education must find out what individuals really are that society may be reshaped and improved.

It is a sad fact that humanity cannot take advantage of the findings of its great thinkers without wasting years and even centuries in doing so. The elements which together make up the philosophy of education for the masses or, as William Hawley Smith puts it, "All the Children of All The People," have been stated and restated, proven and reproven time and again. If we had taken advantage of the wisdom of the real reformers in education we would not now be discussing the problems of vocational education. We would be solving it, as perhaps we are just beginning to solve it by applying the teachings of our predecessors to modern social, economic and political conditions. But the Master himself could not make all men his followers and hence it is too much to expect that humans can do what the master mind could not accomplish. "By their faults ye shall know them," it is written. And as perhaps in our day it is by their labor that they shall be known.

Rousseau, over a century ago, admonished his colleagues in educational practice by saying, "The way to train children is to allow them to try their ways upon the world," and Pestalozzi, in his many school experiences put into action the words of Rousseau. Even more did Kindermann and the Wagamann brothers apply the principle of self initiative and activity by adapting it to the conditions of the working classes in typically industrial schools. And yet today, we are debating issues in vocational education and particularly in industrial education which the old world has forgotten because they are very warp and woof of the foreign educational fabric.

In this connection for example, Dr. Chas. A. Prosser has shown in an address before the Harvard Teachers Association how history has repeated itself in American educational practice by an evolutionary process which reads as follows: "Up to the time of the Civil War the great educational shibboleth was: Education as Training for Citizenship, the ideas of the individual independent upon the state. From the time of the Civil War down to the opening of the twentieth century the educational banner read; Education for the Adjustment of the Individuals, the idea of the individual being trained for his own glory and aggrandizement. And how completely successful was the campaign in educational practice to individualize the child is shown by the greed and avarice of the Twentieth Century as the rapidly unfolded resources of this country made it possible for individuals so nurtured to take unto themselves the wealth which belongs to society."

Not until the beginning of this century of which we are a part, measured only by a few short years, did there seem to take possession of the American people the prophecy of old that man should live by the sweat of his brow and become his brothers keeper. Whether we believe in Vocational Education in the narrow and almost servile sense or whether we give it the meaning that Dr. Dewey has in his Democracy and Education, or whether we believe in it at all, it is generally conceded that today the social and political well being, rather than the unrestrained rights and interests of the individual is the goal of edu-



cation. The transition has been one of education as freedom to Education as conservation, and then to "Education as Preparation for Complete Living," as Prof. Hawes has put it; or perhaps as most vocational education advocates would say, Education to enable each human being to earn a living while living a complete life."

But what is a complete life? Certainly it is not that which is interpreted as one's vocation, defined by Dr. Sneddin as that form of education, the controlling purpose of which is to train for a gainful occupation. One's vocation is not so restricted as to be limited by the occupations which bring the return of a wage. Indeed one's vocation is his life. We are occupied in our vocation quite as much when we are making our home and community life a desirable one as when we are performing the duties of a banker, lawyer, minister or industrial worker. A vocation is a human's work but not alone his work for money gaining. Certainly Dr. Kerschensteiner has made this clear in his book, *Education for Citizenship*, and Dean Eugene Davenport has made the adaptation to American School conditions in his *Education for Efficiency*.

Too much vocational education as it is viewed and practiced today is narrow and stilted. It is not education but training and too often a training in the mere mechanic's of manipulation. It isn't even a good trade training. As Socrates put it: "Half the ills of mankind come from the misuse of words." Let us not think of vocational education as the bare motor training which will enable one to do in a mechanical way those things which modern commerce and industry demand but which done by themselves, divorced from the intellectual and spiritual, make for the life which killeth.

To be sure the social and economic environment of some demand that they take the shorter course in their entrance to the life of the wage earner. Some likewise may take the longer course. The difference, however, should be in degree, not in kind. The purpose should be the same in all cases, viz: the re-organizing of individual experiences that each life may become now as always the best tool in society for working out the good, for self and our fellows. *Service* not individual intrenchment is the keynote of education for democracy and vocational education is its maid servant. When viewed in its largeness it is a means of selecting and developing each individual to his full capacity as a home maker, a community worker and a social servant. General education interpreted as liberal or cultural education has never done this for mankind and it never can because it is essentially aristocratic, not democratic.

It makes no difference whether I am attending a regular public school as one of the favored few or if I am a member of a continuation school either as a permit pupil or an apprentice, or if I have passed beyond the school age and have in my position as a wage earner taken advantage of evening preparation or extension work. My aim is the same, viz: to better enable me in my sphere to adjust and readjust myself to my environment, to build for myself and thus to help build for society a larger world. But my sphere and my environment are not fixed, neither are my aspirations. As a living, reacting unit in society I must grow; hence I must not be restrained or restricted in the things which I can do now or in the future to make of myself all that lies dormant within me. I am not a cog in a wheel. I am an atom in existence and my expansion depends upon how much of the pressure from without is released and how much more therefore I am permitted, not compelled, to vibrate and effect a change in the atoms around me. Vocational education is only a part of the great program of universal education and consequently of education for democracy. On the one hand too many of us are allowed to ramble in our educational journey and thus to get a little of many things but to no purpose. On the other hand even larger numbers are too entirely chained to the lode stone of living merely that they may exist to ever get even a glimmer of the lead in life which might mean for them human conservation in the training of a sound mind in a sound body. Vocational education is a part of the great program for democratic education

in proportion as it ceases to train future citizens by illumination and seeks to train them for the largest service which they can render society through the use of any special talent.

In the last analysis then, vocational education is the conservation of human and natural resources and its relation to general education is found in its true meaning, viz, the preparation of human kind generally for the best of both occupational and leisure time. There is no general education except the one which is a summary of vocational education. There are but two large phases of education in a democracy; one that develops latent powers and puts them to work, the other that which gives us better patriotism as citizens.

In such a program of education the school teacher, quite as much as any member of society has a large task to perform. But he is concerned in the organization of the proper environment to carry it out no more than other representative members of society. The professional, business and industrial leaders and lay-workers are equally concerned even in the organization which we are wont to call the public schools. When we consider that 20,000,000 children represent our school population and the greatest asset of the nation, we do not stop to debate the question whether or not they should be taken care of as well as our hogs, horses and cattle. There is no such question to debate, for when we do not provide for them in the most painstaking and sensible way, it is because we do not stop to reflect upon the momentous problem of education. Once around to the point where we really see the issues involved and realize diversified interests, tastes and abilities of the coming citizenship we rally with heart and pocketbook to the movement which is designed to prepare such a diversified future citizenship for its best,—the movement for vocational education as education for democracy.

We may have scant knowledge of the special needs of vocational education; or of the particular vocations which need the greatest help in the vocational education program; we may argue long as to the best means or method of carrying out a program for democratic education which involves the administration of schools for vocational education but when the spirit of the American people is fired with the belief that the old practice in education is not suited to present needs and that the movement for vocational education is underlaid with the same principles of freedom and liberty that brought into existence this American Republic they will give their all to its support as they did in the earlier freedom.

Such support will be a representative one. All interests will be involved and consequently there will be a single organization controlling the education which has to do with all the people,—this organization will be the public schools. I do not infer that there may not be special committees or advisory boards for each and every particular and distinct branch of educational work but all such will be so knit together that petty jealousies and assumed authorities will be subject to central control which will be dominated by the spirit named, the greatest good for the greatest number,—the spirit of public education.

I can do no better in closing this discussion than to add to the many quotations which I have already used and the thought of others which I have endeavored to express in my own words, three verbatim statements of men whose prominence and reputation put unquestionable value into their words.

John A. Lapp, member of the National Commission on Vocational education and Secretary of the Indiana Commission on Industrial Education says in the book, "Learning to Earn," of which he is coauthor with Carl H. Mate and about which it is reported that Dr. John Dewey said, "It is the only book ever written on Vocational Education." "It," referring to vocational education, "promises the greatest good for every individual in Society—for all of the thirty-eight million people in the country engaged in gainful occupations. It is education not for minorities, not for majorities, but for all the people. All this, certainly is the substance of useful citizenship. Instruction in public affairs is chaff before a strong wind unless the grandeur of public service, the right-

eousness of intellectual freedom, the morality of useful citizenship is burned deeply in the hearts of young men and women. In politics, the old order changeth; Education, too, must change its dress."

Dr. Chas. A. Prosser, once Deputy Commissioner of Education for Massachusetts, for six years Secretary of the National Society for the Promotion of Industrial Education, and now Director of the Dunwoody Industrial Institute of Minneapolis, in a recent article entitled, "Education as Preparedness," in which he speaks of vocational education as the large agent in democratic education says, "We are a people of boundless resources, every dollar of which necessary to equip the schools for the new duties and responsibilities which the best thought of the Twentieth Century is demanded of the schools, should be poured out as the social wealth that rightly belongs to a democracy of conservation."

Last but not least, I quote from the late Andrew S. Draper: "The old order is the persistent expression of social, political, and educational aristocracy. The new order is the advance agent of educational and industrial democracy. The new order is as sure to persist as the republic is to endure for it is the logical outworking of a democracy of a nation."



## PART II

### SECTION MEETINGS

#### ADMINISTRATIVE SECTION

This Section met at 9 A. M. Friday morning for a half-day session. The afternoon was given over to the State High School Athletic Association for the consideration and adoption of a new constitution. Superintendent A. P. Johnson, Urbana, presided at the morning session, and Principal L. W. Smith, of Harvey, was chosen secretary.

The program was carried out in full and the papers or abstracts of papers presented are given below in order of their presentation.

The following members were nominated and elected to membership on the executive committee: Principal W. L. Goble, Elgin, for three years; Principal R. G. Beals, Taylorville, one year, to fill a vacancy on the committee.

The following legislative committee was appointed, with instructions to draught resolutions favoring high school legislation and to present them at the Saturday morning meeting: Principal H. E. Brown, New Trier Township High School; Principal C. C. Condit, Elmwood; Principal J. O. Marberry, Robinson.

The first topic for discussion was The Junior High School.—Progress Made and Results Obtained. The first speaker was Superintendent H. S. Magill, Jr., of Springfield.

Mr. Magill did not use a manuscript and consequently his address can not be given in full. The following is a condensed statement of the principal points brought out in his address.

The junior high school system of organization was introduced in the Springfield schools in September, 1914. A survey of the Springfield schools was made in the spring of 1914 by the Russell Sage Foundation under the direction of Dr. Leonard P. Ayers. In the survey report the organization of junior high schools was strongly recommended for Springfield.

In addition to the fact that Superintendent Magill and his Board of Education became convinced that the organization of junior high schools offered certain advantages, a contributing cause was the overcrowded condition of the Springfield high school.

In September, 1914, in each of two graded schools, the Lawrence and the Feitshans, the seventh, eighth and ninth grades of about three elementary school districts were combined and organized as a junior high school. Since then, two more junior high schools have been similarly established. The six ele-

mentary grades are retained in each of these schools but under an entirely separate organization and program. By combining these junior high school grades from several schools, it has been possible to offer a more differentiated course of study than would be possible in an ordinary school of eight grades and it has also been possible to furnish these junior high schools with more complete equipment, particularly in household and industrial arts, than could have been furnished all the different schools.

In the making of the program for the junior high school it was kept in mind that some pupils would not go beyond the junior high school, others would go through the senior high school but no farther, while some would go on to college. With a purpose of educational and prevocational guidance the junior high school classes are divided into sections offering work adapted to the needs of these different classes of pupils. For example, some girls take domestic science five times a week, and some boys take manual training five times a week, while others in the same grades take it only once a week. Some pupils begin the study of languages in the eighth grade while others do not take the languages at all, but gave their time to prevocational studies.

As a rule, college or university graduates with successful teaching experiences are employed in the junior high schools. The cost is found to be about midway between that of the elementary grades and the high school grades. Experience has shown that more than 90 percent of the pupils finishing the eighth grade continue in the ninth grade. The proportion of the pupils who go from the ninth grade to the tenth grade, or senior high school, is larger than when the system was established.

After more than two years' experience with the system, Springfield is well pleased with the results obtained and the junior high school will be developed and perfected.

Some of the particular advantages of the 6-3-3 plan are:

(1) By grouping a larger number of pupils in the seventh, eighth and ninth grades, it is possible to bring about a better system of classification and so differentiate the work that it may be better adapted to the particular needs of the pupils of these grades.

(2) The system makes it possible to have more supervised study and a larger degree of individual attention, thus promoting educational and prevocational guidance during the adolescent period.

(3) It is possible to equip thoroughly four or five junior high schools to meet the needs of the pupils of the seventh, eighth and ninth grades, when it would be quite impossible to equip twenty different elementary schools.

(4) Trained teachers who are college or university graduates, teach all of the work of the ninth grade, and do some of the work in the seventh and eighth grades. The influence of these more highly educated teachers results in more pupils seeking the benefit of continuing their education through the high school, or possibly through college.

(5) The gap between the eighth and ninth grade is thoroughly bridged, guaranteeing at least one year more of education to very many pupils, while fully as many pupils pass from the ninth to the tenth grade as under the old system.

Principal Zens L. Smith, of Quincy, spoke as follows on the Junior High School Situation in Quincy:

Last fall while discussing the general subject of The Junior High School our esteemed and cautious high school visitor very wisely refrained from detailed discussion of the question as it applies to our own state. I seem to be the fool who has been elected to rush in where Mr. Hollister hesitated to tread. When Mr. Gobel asked me to occupy ten minutes of your time with a discussion

of the Quincy Junior High School I replied frankly that I should be able to offer very few constructive suggestions based on the Quincy situation. In the first place, you will see from the following discussion that the comparatively short time we have been working with the scheme does not place us in a position to draw any definite conclusions, scientific or otherwise from our experiments. In the second place, I may as well say honestly that I have never been entirely in agreement with the plan as it has been worked out in Quincy. We have made mistakes. It is possible that others, about to try out the plan for themselves, may derive profit from a consideration of the history of the Quincy situation.

In the fall of 1910 the departmental plan of teaching was adopted for the 7th and 8th grades in several of the Quincy schools. So far as I am able to learn, its results were largely satisfactory. For sometime prior to the year just mentioned the enrollment in the high school had been steadily increasing. It continued to increase at the rate of approximately 50 pupils a year until, during the year 1913-14, the fact became apparent that before long the high school building would be inadequate to house the pupils. Various suggestions for altering the building were made but none of them seemed entirely satisfactory. Finally in August 1914, the superintendent and the board cut the knot by adopting the following "Junior High School" plan.

Four of the elementary schools were adopted as Junior High School or ninth grade centers, and in these four centers the graduates of the 8th grade were enrolled. No change whatever was made in the courses of study. Before going further, I ought to say just a word regarding these courses of study. In every course offered in Quincy High School the freshmen have always been required to take English and Ancient History. Their other two studies might vary according to whether they followed the College Course or the Manual Training Course or what not, but they all took English and History. Now when this Ninth Grade or Junior High School plan was adopted the courses, as I have just said were unchanged. In order to take care of the electives and special studies the following arrangement was made. The pupils in two of the Junior High School centers reported to the old high school building in the morning where they took their two elective subjects, Latin and Algebra, Arithmetic and Penmanship, or whatever they might be. In the afternoon these two groups reported to their respective 9th grade centers where former high school teachers taught them English and History from the same texts and according to the same plan as had formerly been used in the old four years high school. The other two groups reported to the old high school building in the afternoon and to their respective centers in the morning, following exactly the same plan as that followed by the first two groups, except that in one case the elective work was taken in the morning while in the other it was taken in the afternoon. Of course it is clearly evident that such an arrangement is not a Junior High School at all in the proper sense of that term but is rather a somewhat complicated device for taking care of overcrowding in the main high school building.

After half a year's trial this arrangement proved to possess more difficulties than advantages and it was abandoned, the ninth grade pupils all being gathered into the main high school building, where there hadn't been room for them before. We have promotions every half year in Quincy, so at this time, in addition to the ninth graders just mentioned, there was a group of about sixty who finished the eighth grade in the middle of the year. These people were not sent to the main high school building but were retained in two or three grade centers. Plans were undertaken for the formation of definite courses for these people and those who were to follow them. These plans are still in the process of formation. History was abandoned either as a required subject or an elective and in its place a required course in General Science was worked out based on the Bergen and Caldwell text. In one of the centers a fair amount of laboratory equipment was provided, in the others there was little or none. English was required, Scott and Denny being used as a basic text, but no uniform course



was worked out, the teaching of this subject together with selection of classics, etc., being left entirely to the teachers in the different centers. At the same time the teaching of Latin, Algebra and German was commenced in the last half of the eighth grade. These, of course, were offered as elective subjects.

About 35 of the people mentioned a moment ago entered the Senior High School last February and they have been with us now for a little more than a semester. As I said in the beginning, no valuable conclusions can be drawn from results secured with so small a group. It is however interesting to note that this group was actually smaller than the corresponding class which is a year ahead of them in high school. Apparently the oft repeated assertion that the Junior High School system keeps more pupils in school did not hold in this particular case.

This fall, for the first time, we have received a comparatively large and regular group who have had at least a year or a year and a half under the new system. The present date, of course, is much too early a time to draw any definite conclusions regarding the preparation of these people. Without exception, the impression of the teachers who now have them is that they are not so well prepared as were former groups under the old system. The history teachers tell me that on the whole these people, who now, of course, are in the tenth grade, do poorer work than did the ninth graders under the old system. This may perhaps be explained by the fact that there is no history training at all in the present ninth grade. But the English teachers also state that this group is not so well prepared for tenth grade work as they should be. The preparation in four different centers under teachers of varying ability has brought about a rather mixed condition. The situation in Latin and Algebra is largely the same. In fact it has become necessary to cull about twenty students presumably prepared for Caesar and put them back into a six-week course in first year Latin.

It is to be hoped that the loss in history training may in a measure be offset by a gain in the science department when these pupils come to take up the regular science courses of the senior high school. We have a right to expect that training in general science will lay a fairly effective foundation for later work along special lines. Whether this will really prove to be the case is a matter that only the future can determine.

But if the science work suffers for lack of equipment and preparation, certainly the same thing can not be said for manual training and domestic science. Before the inauguration of the Junior High School system the grade schools that are now ninth grade centers had been well equipped along these lines. This equipment coupled with effective supervision has made it possible for the work of these departments to be continued just as efficiently as it ever was under the old system.

Nothing can be said regarding commercial work because it, like the history, has been entirely omitted from the ninth grade. One rather unfortunate result of this condition is that the pupils who wish to specialize along this line will find themselves rather crowded in planning their three years of Senior high school work.

Throughout what I have said this morning I have taken for granted that you do not care to have me enter into a discussion of the general subject of the Junior High School. I have let theory alone and have tried to confine myself to the facts of a particular situation. I cannot close however without adding that throughout all our various plans for re-organization, 6-3-3, 6-4-4, 6-6 or what not, we seem to be overlooking or failing properly to emphasize the fundamental fact that however good or bad and workable system may be, it is made or irreparably marred by the individuals who work it. Figures showing the length of time spent by the average teacher in one school are appalling. How can a person who is regarded as the veriest Uitlander in the social and civic affairs of his community train for "social efficiency?" I do not wish to be understood as leveling scathing criticism against our teachers as a whole, many of them are

most excellent men and women. Indeed, in present circumstances, the real leader who plans deliberately to spend his life in the field of education is little short of a martyr. Nevertheless, until we cease recruiting our ranks from young men who use teaching as a stepping stone to some other profession; from young women who use it to fill the intervening period of time, long or short, between high school and matrimony; from men who teach because they would fail in any other line of work; from women who teach because the hours are shorter and in some cases the pay better than might be found in selling ribbons, we shall fail and fall short of our ideals be our 'system' never so excellent.

Please do not understand that I am criticising the teachers with whom I work. The teachers of Quincy High School are as fine a group of people as you will find in any high school in the state. The point that I am concerned with is simply this; I believe that we school people spend too much time and energy trying different systems or schemes of organization, while we do not give enough thought to the matter of professional training.

The Decatur situation was presented by Superintendent J. O. Engleman. Following is an abstract of Superintendent Engleman's address:

Decatur has by no means solved the Junior High School problem, but it has made a beginning. For four years it has maintained one such school with grades seven and eight only. This year it has a second one with the same organization upon a smaller scale. Next year it will have a third one, and proposes to have grades seven, eight and nine in each of the three. To make this possible a new building will be erected, designed to accomodate five hundred students, and adapted to the needs and requirements of such a school.

Our experience convinces us that this organization makes it possible to do better teaching than can be done in the ordinary grade school where every teacher must teach every subject in the curriculum except sewing and manual training. It is only reasonable to expect a teacher to teach the one subject of her choice, a subject in which she has made and continues to make special preparation, better than she could teach a half dozen subjects. This advantage, in other words, results from massing the children of these grades in one or more centers for departmental teaching, whether the school bears certain other earmarks of the Junior High School or not.

A second commendable feature of the school is the grouping of children upon the basis of their ability into fast, medium and slow moving groups. In other words, the individual differences of the pupils are more nearly respected, and the work more nearly adapted to them, even in the traditional subjects belonging to these grades. Under such conditions the work is more satisfactory, both to students and teachers.

Third, we have been able to do some worth while work in Vocational Guidance not possible in the elementary school. The principal of the school has met all members of the eighth grade class once a week for one semester for conference, study and reports. While no effort has been made to steer the students of this grade into any particular vocation or calling, a general survey is made with each class of the requirements, opportunities and limitations found or embodied in each of a score or more of callings. The reading and thinking along this line has been most wholesome. Each class, for example, discovers that there are certain minimum essentials of a physical, intellectual or moral sort to be found in a number of vocations. On the other hand there are certain requirements peculiar to individual vocations without possessing which the student entering is almost doomed to failure in advance. But perhaps the greatest good that comes from this course is the basis it gives these students for electing their high school courses with some wisdom. Whether or not they ought to take a manual arts course, a domestic economy course, or something else, is

not always an easy question to answer; but it can be answered with more intelligence in the light of the information gained and the conclusions reached in such a course as we give in vocational guidance or vocational direction in our school.

Fourth. Some little attempt is made possible at a differentiation of curricula and provision for effectives. There are certain limitations upon this freedom imposed by the building that we are occupying which prevents our giving students as much latitude here as would be profitable. But our 8A students may take Algebra, if they desire, and receive credit for it in the regular high school course. They may take general science and receive similar high school credit, and if their English is of high enough grade they get one semester's advance standing in high school in that subject. We have not yet found it possible to give the extra amount of vocational work that it would be profitable to offer many students of this age, nor have we been able thus far to introduce any language teaching—Latin, German or French—in these grades.

While we have noted the foregoing advantages we have not failed to note that our Junior High School as organized at present, is costing us considerably more than it would cost to teach the same students in the ordinary elementary school. Indeed, the year ending June 30, 1915, the per capita cost in our grades below the Junior High was approximately \$31; in the Junior High it was \$51; and in the High School, \$71. We believe that the cost of the Junior High as at present arranged is greater than it ought to be in spite of the advantages resulting from that type of organization. An effort will be made to conserve its present advantages and even materially increase and multiply them and yet reduce the per capita cost. I think this will be possible.

Finally, there is the obvious disadvantage in this organization that comes from having children, twelve or thirteen, walk several squares farther and sometimes several times as far to reach a central school as would be necessary in attending an ordinary grade school in the immediate neighborhood. Some parents object to this and prefer to have their children stay closer home even if they grant that the advantages in instruction are fewer there. I do not believe this is a very formidable objection to the junior high school, however, and I am sure that our experience in Decatur is that it is a constantly decreasing factor in the case. With a multiplication of these schools and a proper distribution of them the objection would be almost wholly overcome.

The next number on the program was the Township High School Movement, by Professor H. A. Hollister. The original intention was to discuss this somewhat broadly in its relation to various other evolutionary aspects of the state school system. The exigencies arising from the decision of the Supreme Court of the State in October by which the 1911 law for organization of "community" high schools was declared to be unconstitutional led to a complete change in the plan of presentation. In order to answer some few of the multitude of questions which came to the High School Visitor's office the following brief statement was presented instead:

#### The Township High School Movement.

This movement began at Princeton, Bureau County, in the autumn of 1865. It became a legalized fact for Princeton in 1867, and for the state at large in 1872. The cause of the movement appears in the fact that the high school naturally ministers to a larger unit than the elementary school. This is necessary if for no other reason than that the departmental nature of high school work calls for a considerable number of pupils in order to make such a classification



practicable. Another cause is seen in the fact that the financial support of the school logically falls upon the territory tributary for high school purposes, and not on the more restricted area which may be included in the elementary district of a given village, town or small city.

The first law provided for the organization of the school township as a district for high school purposes. It did not take into consideration the fact that in only a comparatively few townships is the village or town which would naturally form the nucleus of such a district near the center of the proposed larger district.

Various plans were discussed with a view to remedying this defect. Among other things the law was caused to provide for the formation of a district out of a township and parts of other townships. This provision required an affirmative vote in each fraction of a township included. The voting plan was complicated and such a proposition was almost invariably defeated. Up to the close of 1910 only 56 high school districts had been organized and set in operation under the township law and its modifications.

In 1911 the Legislature passed the famous 1911 law for the organization of "contiguous and compact territory" into districts for high school purposes. This permits an organization regardless of township or even county lines on an affirmative vote of the legal voters of the proposed district, voting as a unit. In other words the law provided for the creation of a new political unit and was really not a township law at all. Its administration was placed in the hands of county superintendents instead of township trustees.

Since the enactment of this 1911 law over two hundred districts have been organized and put into operation, thus making possible a number of strong four year high schools to replace many weak, one or two teacher high schools, or to make possible a strong community high school for country and city alike.

But it seems that there were some very weak points in this law. First of all, some of its provisions were vague and apparently somewhat contradictory. In the second place it permitted the people of any given community to determine their district boundaries without regard to the interests of adjoining communities. As a result in several instances the rights of outlying communities were infringed upon, and much litigation arose. Several cases found their way to the Supreme Court of Illinois, and at the October term a decision was handed down which declared the law to be unconstitutional. In view of the fact that the supreme Court had once before rendered an adverse decision and had later reversed the same, and has subsequently passed upon several cases relating to the validity of the law in each instance sustaining the law, this act of the Supreme Court came as a great surprise to those interested in the high school situation.

The situation now finds us without any law except the old township law, which, as we have pointed out, is practically ineffective. The Supreme Court, however, foresaw the disastrous effect which their decision might have on the two hundred or more districts already organized and in operation. The Court, in an addendum to the decision said: "It does not necessarily follow, if this act is held to be invalid, that great financial loss and public inconvenience will result in many high school districts which have been organized and are in operation. The general school law of 1909 provides for the organization of high school districts, and while the procedure there prescribed for organizing districts differs from that followed in the districts which attempted to organize under the act of 1911, such districts, when fully organized and equipped would undoubtedly be held to be *de facto* districts."

"But what is a *de facto* district?" you ask

It has been declared by authority of the Courts that a "high school board of education is a body, politic and corporate by the firm name and style of 'Board of Education of District No. —, County of — and State of Illinois,' and by that name may sue and be sued in all courts and places where judicial proceedings are had."

The Courts declare that a corporation *de facto* is subject to the same liabilities as a corporation *de jure*.

The essential elements of a *de facto* corporation as defined in Illinois Court decisions are:

1. There must be a law under which the corporation might be created.
2. There must be evidence of attempt to organize in good faith.
3. There must be colorable compliance with law.
4. A *de facto* corporation exists where articles of association are prepared and filed under law.
5. There must appear the attempt to organize under general incorporation law, use of the corporate name, election of officers.
6. It is essential that there be user under the law authorizing incorporation.

The acts of user must be such as to clearly indicate corporation.

No where in the annals of school legislation have I ever seen the record of any such setting aside, by a Court, of the apparent will and desire of the people of a state after repeatedly approving the act, and all because of the clamor set up by a relatively small number of "tax-payers." A rehearing has been asked, but it would seem to be the height of the ridiculous to grant such a reconsideration now.

The addendum of the Court, as above given, saves the situation from complete disaster for most of the districts organized. Others will be safe only if the people are practically united in the community concerned. But any disgruntled trouble maker may, by means of *quo warranto* proceedings, tie up the school situation. This has already happened in some cases.

We should ask the Legislature, at the earliest possible moment, to legalize the districts already formed under the law. This should include all districts in which a board of education has been duly elected, qualified and organized for the operation of a school.

At the last meeting of the Schoolmaster's Club a committee was appointed to draft a bill that should care for the entire high school situation, including the district law and the method of providing free tuition. This was before the action of the Court. This committee has such a bill practically ready to submit to the Legislature. In brief, the proposed bill provides:

(1) For the creation of a County Board whose duty it shall be to district the county for high school purposes.

(2) It provides for two classes of districts,—those maintaining fully organized high schools, and those not maintaining schools but which are to provide for payment of tuition in other districts.

(3) It provides a way for the readjustment of boundaries of districts already formed.

(4) Provision is made whereby the people of a district, as created by the county board and not maintaining its own high school, may establish and maintain a school.

(5) In case a district is created in which a two, three or four year high school already exists, the territory outside of such organized high school district only is to be taxed for tuition of such of its pupils as may attend high school.\* In this connection equitable provision is made for payment of tuition for third and fourth years where only two or three year schools are maintained.

It seems fitting, under the circumstances, that this Conference which is the largest gathering of high school principals and teachers of the state, should take some action looking to the approval and support (1) of validating legislation for districts formed under the 1911 law; (2) of the passage of the measure as proposed by the committee of the Schoolmaster's Club. I therefore most earnestly recommend that this Section inaugurate such action.

The Professional Reading of the High School Principal, together with a Bibliography of material for such reading was presented by Principal Franklin W. Johnson, of the University High School, Chicago. As Mr. Johnson's discussion is based on the bibliography, the latter is presented first.

A BIBLIOGRAPHY OF MATERIAL FOR THE PROFESSIONAL READING OF SECONDARY SCHOOL PRINCIPALS, WITH NAMES OF PUBLISHERS, DATES OF PUBLICATION, NUMBER OF PAGES AND PUBLISHER'S PRICES.

A member of the Department of Education in each of the following universities: Chicago, Columbia, Harvard, Illinois, Iowa, Minnesota, and Wisconsin, was asked to name from ten to fifteen books which he regarded as the most valuable for the professional reading of secondary school principals. The list below is based on the replies received, the number before the author's name indicating the number of times each book was mentioned. In the request for recommendations no reference was made to educational journals. The emphasis placed upon these by some of those from whom lists were received indicates that these are regarded as extremely valuable.

The material is roughly classified under several heads, the titles under each head being arranged in order of the number of choices; those receiving one choice are arranged in alphabetical order.

I. Principles of Education.

- (5) Dewey, John, *Democracy and Education*, MacMillan, 1916, pp. 434, \$1.40.

An introduction to the philosophy of Education. The author "endeavors to detect the state and ideas implied in a democratic society, and to apply these ideas to the problems of the enterprises of education."

- (1) Bagley, W. C., *Educational Values*, MacMillan, pp. 267, \$1.10, 1911.

The control of conduct; the classification of functions and values.

- (1) Bolton, F. E., *Principles of Education*, Scribners, 1910, pp. 790, \$3.00.

The author "assembles the main, well tested results of the scientific study of education from the psychological and biological viewpoints and presents them in a way which secures continuity, correlation, and a unified interpretation of them."

- (1) Moore, Ernest C., *What is Education*, Ginn, 1915, pp. 357, \$1.25.

A discussion of some of the fundamental presuppositions of education which teachers must have in mind in order that clear ideas upon them may shape and control their work.

2. Psychology.

- (6) Judd, Charles H., *Psychology of High School Subjects*, Ginn, 1915, pp. 515, \$1.50.

A practical application of psychology to the materials and methods of high school instruction.

- (1) Ames, E. S., *Psychology of Religious Experience*, Houghton, Mifflin, 1910, pp. 428, \$2.50.

Chapters XL-XIV deal with the psychology of adolescence.

- (1) Angell, J. R., *Psychology*, Holt, 1905, pp. 402, \$1.50.

An introductory study of the structure and function of human consciousness.

- (1) Colvin, S. S., *The Learning Process*, MacMillan, 1911, pp. 336, \$1.25.

The psychology of learning as related to the theory and practice of elementary and secondary education.

- (1) Dewey, John, *Interest and Effort in Education*. Houghton, Mifflin, Riverside Educational Monographs, pp. 102, \$60.

Discusses types of interest and their place in the theory of education.

- (1) Hall, G. Stanley, *Adolescence*, Appleton, 1904, Vol. 1, pp. 589, Vol. 2, pp. 784, \$7.50.

The psychology of adolescence and its relation to physiology, anthropology, sociology, sex, crime, religion, and education.



- (1) Thorndike, E. L., *Psychology of Learning*, Teachers College, 1913, pp. 452, \$2.50.

An experimental study of the learning process.

### 3. Administration.

- (7) Johnston, C. H., *The Modern High School*, (Revised Edition) Scribners, 1916, pp. 847, \$1.75.

The administration and extension of the high school with examples and interpretations of significant movement. Contains extensive bibliography.

- (7) Monroe, Paul (editor), *Principles of Secondary Education*, MacMillan, 1914, pp. 790, \$1.90.

Contains twenty-one chapters by the author and thirty-two other specialists on the history of secondary education in the United States and foreign countries, the organization of the high school, the psychology of adolescence, moral and religious education, the materials of secondary education, the social aspects of the high school, and the reorganization of secondary education.

- (4) Johnston, C. H., *High School Education*, Scribners, 1912, pp. 555, \$1.50.

Contains chapters by the author and several others on the history, organization, and materials of instruction of the high school.

- (3) Cubberley, E. P., *Public School Administration*, Houghton, Mifflin, 1916, pp. 479, \$1.75.

A statement of the fundamental principles underlying the organization of public education.

- (3) Brown, J. F., *The American High School*, MacMillan, 1909, pp. 462, \$1.40.

Discusses the organization and management of the high school.

- (3) King, Irving, *The High School Age*, Bobbs-Merrill, 1914, pp. 233.

Discusses the physical, mental, and social characteristics of adolescence in their relations to the organizations and activities of the school.

- (2) Hollister, H. A., *High School and Class Management*, Heath, 1915, pp. 314, \$1.25.

Administration and technique of teaching of the high school.

- (2) Hollister, H. A., *High School Administration*, Heath, 1909, pp. 379, \$1.50.

Discusses the material equipment, the program of studies, methods of instruction, discipline, etc., of the high school.

- (2) Russell, W. F., *Economy in Secondary Education*, Houghton, Mifflin, 1916. *Riverside Educational Monographs*, pp. 74, \$.35.

Causes of waste discussed with comparison with foreign schools.

- (2) Stout, J. E., *The High School*, Heath, 1914, pp. 322, \$1.50.

Treats of the function, organization, and administration of the high school.

- (1) Davis, C. O., *High School Course of Study*, World Book Co., 1914, pp. 172, \$1.50.

A constructive study applied to New York City.

- (1) Hollister, H. A., *The Administration of Education in a Democracy*, Scribner's, 1914, pp. 383, \$1.25.

Deals with school administration with democracy as a unifying principle.

- (1) Morehouse, F. M., *The Discipline of the School*, Heath, 1914, pp. 342, \$1.25.

Deals with the theoretical and practical aspects of school discipline.

- (1) Sachs, Julius, *The American Secondary School*, MacMillan, 1912, pp. 295, \$1.10.

A discussion of the aims and methods of the public and private secondary school with frequent reference to the practices of foreign countries.

- (1) Strayer, G. D., and Thorndike, E. L., *Educational Administration*, Macmillan, 1913, pp. 391, \$2.00.

- An application of scientific method to the studies of students, teaching staff, organization of schools, and school products.
4. Historical and Comparative.
    - (3) Brown, E., *The Making of Our Middle Schools*, Longmans, 1902, pp. 547, \$3.00.
    - An authoritative and exhaustive treatment of the history of secondary education in America.
    - (3) Farrington, F. E., *French Secondary Schools*, Longmans, 1910, pp. 450, \$2.50.
    - An account of the origin, development and present organization of secondary education in France.
    - (3) Russell, J. E., *German Higher Schools*, Longmans, 1899, pp. 455, \$2.50.
    - The history, organization, and methods of secondary education in Germany.
    - (2) Larnod, W. S., *The Oberlehrer*, Harvard University Press, 1914, pp. 150, \$1.25.
    - A study of the social and professional evolution of the German school-master with application to conditions in American schools.
    - (1) Brereton, Cloudsley, *Studies in Foreign Education*, Houghton, Mifflin, 1913, pp. 302, \$1.60.
    - A comparative study of French, English and German secondary schools.
  5. Methods of Teaching.
    - (7) Parker, S. C., *Methods of Teaching in High Schools*, Ginn, 1915, pp. 529, \$1.50.
    - A practical treatment of methods in which the author takes the point of view that efficiency and economy in instruction are facilitated by (1) radically adapting all instruction on sound psychological principles which have been determined as far as possible, experimentally, and (3) applying principles of scientific business management to the conduct of teaching.
    - (2) Bagley, W. C., *The Educative Process*, MacMillan, 1905, pp. 358, \$1.25.
    - Covers the field commonly included under the term "General method," but deals with principles rather than with the details of device and method.
    - (2) Dewey, John, *How We Think*, Heath, 1910, pp. 224, \$1.00.
    - The nature of reflective thought, and means and methods of training and thinking in the schools.
    - (1) Bagley, W. C., *Craftsmanship in Teaching*, MacMillan, 1911, pp. 247, \$1.10.
    - (1) Brown, R. W., *How the French Boy Learns to Write*, Harvard University Press, 1915, pp. 260, \$1.25.
    - A study in the teaching of the mother tongue.
    - (1) Hall-Quest, A. L., *Supervised Study*, MacMillan, 1916, pp. 433, \$1.25.
    - A discussion of the study lesson in the high school.
    - (1) Parker, S. C., *Textbook in the History of Modern Elementary Education*, Ginn, 1912, pp. 505, \$1.50.
    - Emphasis on school practice in relation to social conditions.
    - (1) Sandwick, R. L., *How to Study*, Heath, 1915, pp. 170, \$60.
    - Discusses the principles of effective study.
    - (1) Stevens, Romiett, *The Question as a Measure of Efficiency*, Teachers College Contributions to Education, No. 48, Teachers College, 1912, pp. 95, \$1.00.
    - A critical study of the efficiency of class room instruction as measured by the number and quality of questions.
    - (1) Thorndike, E. L., *The Principles of Teaching*, Seiler, 1906, pp. 293, \$1.25.
    - A manual to guide in the application of principles based on psychology.
    - (1) Whipple, G. M., *How to Study Effectively*, Public School Publishing Co., pp. 44, \$.50.
    - A clear discussion of the principles of effective study with practical suggestions for forming right habits.

## 6. Measurements and Researches.

- (2) Starch, Daniel, *Educational Measurements*, MacMillan, 1916, pp. 202, \$1.25.

The measurement of abilities in various subjects of the elementary and high school curricula.

- (1) Freeman, F. M., *Experimental Education*, Houghton, Mifflin, 1910, pp. 220, \$1.30.

A laboratory manual for experimental education.

- (1) Van Denberg, J. K., *Causes of the Elimination of Students in Public Secondary Schools of New York City*; Teachers College Contributions to Education, No. 47, pp. 206, \$1.50.

- (1) Whipple, G. M., *Manual of Mental and Physical Tests*, Warwick and York, 1915, 2 vols., pp. 534 and 336, \$3.75 set.

The purpose and methods of conducting tests with the results and conclusions of many tests.

## 7. Surveys.

- (2) *Cleveland Survey*, Russell Sage Foundation, 1916, 25 vols.

The most complete survey yet made, consisting of 16 volumes directly relating to the schools, and 9 volumes on the vocations of the city of Cleveland.

## Schools.

*Child Accounting in the Public Schools*, Ayers, L. P., \$25; *Educational Extension*, C. A. Perry, \$25; *Education through Recreation*, G. E. John, \$25.

*Financing the Public Schools*, Earle Clark, \$25.

*Health Work in the Public Schools*, L. P. Ayers, & Mary Ayres, \$25.

*Household Arts and School Lunches*, A. C. Boughton, \$25.

*Measuring the Work of the Public Schools*, C. H. Judd, \$50.

*Over-crowded Schools and the Platoon Plan*, S. O. Hartwell, \$25.

*School Buildings and Equipment*, L. P. Ayres & Mary Ayres, \$25.

*Schools and Classes for Exceptional Children*, David Mitchell, \$25.

*School Organization and Administration*, L. P. Ayres, \$25.

*The Public Library and the Public Schools*, L. P. Ayres & Adele McKinnie, \$25.

*The School and the Immigrant*, H. A. Miller, \$25.

*The Teaching Staff*, W. A. Jessup, \$25.

*What the Schools Teach and Might Teach*, Franklin Bobbitt, \$25.

*The Cleveland School Survey* (summary volume) L. P. Ayres, \$50.

## Vocations.

*Boys and Girls in Commercial Work*, Bertha M. Stevens, \$25.

*Department Store Occupations*, Iris P. O'Leary, \$25.

*Dressmaking and Millinery*, Edna C. Bryner, \$25.

*Railroad and Street Transportation*, R. G. Fleming, \$25.

*The Building Trades*, F. L. Shaw, \$25.

*The Garment Trades*, Edna C. Bryner, \$25.

*The Metal Trades*, R. R. Lutz, \$25.

*The Printing Trades*, F. L. Shaw, \$25.

*Wage Earning and Education* (summary volume) R. R. Lutz, \$50.

- (1) *Educational Section of the Springfield, Illinois, Survey*, L. P. Ayres and others; Russell Sage Foundation, 1914, pp. 152, \$25.

- (1) *Portland, Oregon, Survey*, by E. P. Cubberley and others, World Book Co., 1915, pp. 441, \$1.50.

A textbook on city school administration based on a concrete study.

## 8. Industrial Education and Vocational Guidance.

- (3) Davis, J. B., *Vocational and Moral Guidance*, Ginn, 1914, pp. 303, \$1.25. Emphasizes methods of vocational and moral guidance through oral and written expression in English.

- (1) Kerchensteiner, George, *The Idea of the Industrial School*, MacMillan, 1913, pp. 110, \$50.



Translated from the German.

- (1) Leavitt, F. M., *Examples of Industrial Education*, Ginn, 1912, pp. 330, \$1.25.

An interpretative survey of current types of industrial education.

- (1) Puffer, J. A., *Vocational Guidance*, Rand McNally, 1913, pp. 294, \$1.25.  
The equipment and methods of the counselor; various occupations and professions.

- (1) Thompson, F. V., *Commercial Education in Public Secondary Schools*, World Book Co., 1915, pp. 194, \$1.50.

A critical and constructive treatment of current problems in commercial education in the secondary school.

- (1) Carlton, F. T., *Education and Industrial Evolution*, MacMillan, 1908, pp. 320, \$1.25.

A discussion of the problems connected with social and industrial betterment.

- (1) Davenport, Eugene, *Education for Efficiency*, Heath, 1909, pp. 184, \$1.00.

Industrial education in the elementary and high schools with particular reference to agriculture.

#### 9. General.

- (2) Lewis, William D., *Democracy's High School*, Houghton, Mifflin, 1914.  
Riverside Educational Monographs, pp. 130, \$60.

A popular discussion of the school with emphasis upon the pupil rather than the traditional subjects of instruction.

- (1) Butler, N. M., *The Meaning of Education*, Scribners, 1915, pp. 378, \$1.50.

Seven essays and addresses dealing chiefly with the function and organization of the school.

- (1) Monroe, Paul (editor), *Cyclopedia of Education*, 5 vols. Macmillan, 1911, \$5.00 each.

A concise discussion of all topics of importance and interest to the teacher with cross references and bibliographies.

- (1) Sneed, D. S., *Problems of Educational Readjustment*, Houghton, Mifflin, 1913, pp. 262, \$1.50.

- (1) Weyl, W. E., *The New Democracy*, MacMillan, 1913, pp. 370, \$2.00.

An essay on certain political and economic tendencies in the United States.

#### 10. Periodicals and Proceedings.

*School Review*, University of Chicago Press, \$1.50.

Published monthly except July and August. A journal of secondary education.

*Educational Review*, Published monthly except July and August, Educational Review Publishing Co., Easton, Pa., and New York. Nicholas M. Butler, Editor, \$3.00.

A journal dealing with the general field of education.

*Educational Administration and Supervision*, published monthly except July and August, by Warwick and York, Lancaster, Pa., & Baltimore, Md., Managing Editor, C. H. Johnston, \$2.00.

*Proceedings of the North Central Association of Colleges and Secondary Schools*, published by the Association, Henry E. Brown, Secretary, 1916.

[It is unfortunate that Mr. Johnson did not have time, owing to the lateness of receiving the invitation to prepare such a list, to get a wider expression of opinion as a basis for the above classification. Owing to the wide range of subjects considered such judgments are uncertain at best; and the findings of only seven or eight persons can hardly be considered a just basis for such a classification.—Editor.]

Following is Mr. Johnson's discussion.

### The Professional Reading of the High School Principal

Until recently, the term professional training, if applied to high school teachers, has been a misnomer. The best recruits to the ranks brought a formal mastery of one or more subjects, certified to by the optimistic heads of college departments whose sublime contempt for training in methods of teaching they had come to share. Successful methods, if acquired at all, were the result of costly experiment upon the human material that fell helpless into their hands. The case was essentially the same with the principal. Callow youths, their college course just completed, entered upon the duties of the principalship with no additional qualification except, perhaps, the promise of executive ability based upon their own self assurance and conceit. Those whose early promise was measurably fulfilled by experience or who developed an aptitude for practical politics were promoted to higher positions, leaving their former places to be filled by others of the same sort.

But now, however, that the recent demand for efficiency has been extended to all forms of industrial and social enterprises, the schools are in for an overhauling. The inadequacy of the traditional curriculum to meet modern social demands and the inefficiency of methods of instruction and administration have been brought to light. And now suddenly we school principals find ourselves confronted with a new vocabulary consisting of such terms as individual differences, normal distribution curve, motor control, reflective thinking, etc., which we must learn in order to save our faces, to say nothing of our jobs. The zeal with which we flock to the centers of learning and spend the heated term in pursuit of knowledge of which we have never before felt the need indicates that we are awake to the gravity of the situation.

Along with all this we have come to realize that the functions of a principal include something more than sitting in a swivel chair and dispensing discipline to recalcitrant pupils and parents, making out programs of recitations for the subjects of a traditional curriculum, and keeping the record of the school. We have found that some of our accustomed tasks can be better done by a fifteen dollar clerk, some can be delegated to other members of the teaching staff with benefit to all, and some do not need to be done at all. A knack for getting on with people in settling or avoiding difficulties and a facility in the performance of routine office tasks are coming to have relatively less importance while the interpretation of the modern social demands in terms of curriculum, materials, and methods of instruction which shall function in actual life experience has become of paramount importance. The principal must no longer be a mere craftsman but a professionally trained leader of the teaching staff and in matters of education, of the entire community.

The new demands upon the principal require a breadth of reading and experience which few have had but all must strive to attain. Until recently, the literature of education has been in the form of a philosophy whose implications have been too vague for application in actual school procedure or of a methodology which has found its application only in the practice of the elementary school. The last ten years, however, have been marked by the publication of a wealth of material dealing with the secondary school which is quite appalling to the principal who feels the need of mastering the literature of his calling. Some of this is of excellent quality, some is hardly worth reading, but all of it indicates an attitude that is full of promise. The high cost of paper is likely to check the flood temporarily so that we need not utterly despair of finding our bearings. What we need just now is a pilot to chart the course.

In undertaking to prepare a bibliography which he could confidently recommend as including the books which every principal should read and excluding those of merely ephemeral value, the writer was at once struck with his inadequacy to the task. His experience in preparing the following bibliography leads to the conclusion that no single person is able to prepare such a list. A

number of men whose work is in the field of secondary education in universities in various parts of the country were asked to submit lists of ten or fifteen books which they regarded as most valuable for the professional reading of high school principals. Eight men submitted such lists, one each from the following universities: Chicago, Columbia, Harvard, Illinois, Iowa, Minnesota, Pittsburgh, and Wisconsin. Three of these named more than fifteen, one named only nine. Some of the titles included more than one volume. All the titles suggested have been included in the following list. In the request for recommendations no reference was made to educational journals. The emphasis placed upon these by some of those submitting lists indicates that these are regarded as extremely valuable and would doubtless have received further recommendation had their inclusion been suggested. One said, "I feel that the best books in secondary education for principals of high schools are the volumes of the *School Review*."

The material has been roughly classified under ten heads. The titles under each head are arranged in order of the number of choices assigned to each; those receiving one choice are arranged in alphabetical order. The publisher's name, date of publication, number of pages, and net price are given in each case. A brief bibliographical note is appended with each title, intended to suggest the content or distinctive method of treatment of the book.

Several significant facts appear in this bibliography. The large number of titles indicates the difficulty of selecting from the available material what is of most value. There are sixty-two different titles including in all ninety-one books and journals. In four of the main divisions there is pretty general agreement on the most important books: Dewey's *Democracy and Education* (5), Judd's *Psychology of High School Subjects* (6), Johnston's *Modern High School* (7), Monroe's *Principles of Secondary Education* (7), Parker's *Methods of Teaching in High School* (7). Davis' *Social and Moral Guidance* (3), is the only book receiving more than one choice in the group on *Industrial Education and Vocational Guidance*. The field of administration has more titles than any other, fourteen in all, of which two receive seven choices each, and eight others receive two or more choices. Division four, composed of books dealing with the history of secondary education or with foreign secondary schools, contains four titles with two or three choices each. Another noticeable fact is revealed by the dates of publication showing that all but four of these books have been written within the last ten years, most of them within the last five years.

The final and leading paper of the morning was on *The Place of Industrial Education in the High School* by Professor F. D. Crawshaw, University of Wisconsin, who spoke as follows:

I want to treat my subject by at least attempting to answer two questions:

1. What is meant by Industrial Education? Is it Manual Training or is it trade training; or is it something which combines some of the elements of both?

2. What are the possibilities and what is the scope of industrial training in the High School?

Of the two questions, the latter is the most important in this discussion, but it depends largely upon our answer to the first.

I feel that manual training as it has been understood by many in the past, and trade training as we know it in industry, represent the extremes of industrial education.

Manual training on the one hand is formal, almost stereotyped, handwork in which every pupil is doing a particular stunt in tool manipulation at one and the same time, and in which the progress of a class is measured by the teacher



in terms of a sequence of exercises, models or projects, arranged presumably because a particular educational value is attached to each project, and because a particular educational value is attached to the sequence.

If together, we can picture such a type of industrial work, we shall see a large class of boys and girls fashioning things out of clay, textiles, wood or metal in which they may have little or no interest, because the thing being done in no way appeals to them. It is the kind of industrial work which is not far removed from the early Danish Sloyd, in which every pupil in a class moved a saw, or raised or lowered a hammer, as the instructor counted, or as some musical instrument played. It is removed far less from the early Swedish Sloyd in which all children made at one time a particular pattern of some object supposed to have a social value because it had a use in some environment in which the child making the object had a part. It is no less far removed from the early Russian manual training in which a sequential series of abstract exercises were arranged to teach the use of tools and develop mechanical skill.

If we have similar views of this picture or these pictures, we shall, to an individual, say, that they do not represent the kind of industrial work we want today in our schools, even though the work is based pedagogically upon the theoretical intellectual value of motor activity, progressive tool exercises, and general social relationships. We don't want it because it leaves the child out of account. It does not make an individual and personal appeal except to here and there an individual child and then it does so only accidentally.

But with all of our disapproval of such industrial work, which indeed we may not class at all as a part of industrial education, we know that it still exists and to a much greater extent than we may think. When I was connected with this institution, I visited many if not most of the High Schools of this state and in the majority of cases the work I saw done in manual training classes, below the sophomore year of high school at least, savored very strongly of the kind I have attempted to describe. I have practically traveled three times over the state of Wisconsin visiting high school manual arts departments, and, while a wonderful transition has taken place in these schools in the past five years, perhaps largely due to our continuation industrial schools, not more than three years ago many of these schools were hide bound by the kind of industrial work I have described, and even now one of the most widely known cities in the state still has manual training that can be described only as formal, abstract, and dilletante. Indeed I think the same statement can be made of Illinois so far as it refers to grade manual training.

Let us consider now the other extreme mentioned, viz. trade work, as a type of industrial work for the high school. Under the influence of the movement for industrial education, many instructors have plunged headlong and blindly into the practice of teaching, or attempting to teach, trades. There is only one trouble with this policy or practice that is more important than any other, viz: *it can't be done*—that is, in school. The school properly equipped and manned with the right kind of an instructor who must first be a mechanic and second, a teacher, can do much to teach the principles of the trades and to give some of the common and fundamental practices in them. It can never do more because the trade is a child of industry, and taken away from industry, it is an orphan separated from the environment in which it must be, in order to develop to full strength.

Again, what is the reason for teaching or attempting to teach trades in the high school? We say the high school is our educational forum—the People's College. Very good; no one believes this more than I, but as such, should one attempt to teach in it anything and everything under the sun? And if so, for what purpose?

This is the Administrative Section of this Conference, and you gentlemen know much better than I do that you cannot administer the public high school, except perhaps in a large city, upon the basis of teaching *thoroughly*, all the

possible activities of adult community life. If you attempt to do so, the result is a hodgepodge in curricula and a farce in training.

Many of the high schools of Wisconsin, especially the smaller ones, have introduced courses (and sometimes a number) in agriculture, commerce, domestic science and manual arts. Those in charge of them are beginning to discover two things. First: that the traffic will not justify such extravagance. There are not enough pupils to form classes in all of these lines and the expense of equipment and teaching force is prohibitive. Second: they are finding that the work at best can only be *attempted*—played with under the makeshift of artificial conditions. The result to the pupil is a scattering of individual effort, a loss in intellectual intensity and a lack of continuity and unity in subject matter. To teach a trade in the public high school seems to be impossible both from the standpoint of the physical conditions and the proper educational environment.

Now I have rather severely criticised both the early practice of manual training and also the very present attempt on the part of some to teach trades in the high school. I have criticised two extreme practices because they are extreme and in the long run, the extreme is never safe. But in the extreme we often find the elements of good and so both in the early industrial work under the name of manual training and in the industrial work of a trade character I find considerable good.

Under the heading of the "Possibilities and scope of industrial work in the high school", I want to show what this good is, and that it can be used under present school conditions.

Probably the chief element of value in the early manual training course is the pedagogical one. By this I mean the carefully organized, sequential and progressive development of work in the form of a course of study. If one will study Salomon's Educational Sloyd, he will find out, while projects are selected which all the members of a class are supposed to make at essentially one and the same time, they have been chosen with reference to their inherent characteristics regarding the use of tools quite as much as for their supposed usefulness. Each project is analyzed as to tool elements, and each of these elements is given a number. Thus for each project, by studying the tooled elements involved in making it, one knows whether one or all of these elements are new or old. Likewise for any particular project, by reviewing the numbers indicating the elements in previous or succeeding projects, he knows just how a tool or a particular use of it is repeated in a series of projects. An ascending progression of difficult tasks can then be arranged, as it is in the Sloyd course of study, and all pupils are assured of definite prearranged experiences by following such a course.

Much the same sort of thing is true of the early Russian Manual Training courses. In them one finds tools and their uses analyzed and graded in what has been termed a series of abstract exercises. No one of these has any particular use when completed. Their construction is supposed to develop skill of hand, and hence achievement in mechanical execution is the goal of such a course. No direct social value was originally or may now be attached to such a course as was the original design and as is doubtless the case now in Sloyd.

The significant feature of both of these types of industrial work is the analysis which the teacher makes of the pupils' work—the *course of study* feature.

Primarily, so far as we are concerned in the administration of industrial work, the significant thing about these early courses is the teacher's organization of teaching material used in the class room. The insignificant and almost ridiculous thing about them is their interest value to children. They have none. If, now, we can add child interest in work done to the essentially good feature

of careful organization of teaching material, we shall have a sound combination of essentials as a basis for present industrial work in school.

In the present trade type of industrial work we see practically none of the organization referred to as found in manual training, but we do find it in much of the child interest value in the thing made. If the work is done in a typical trade school, then the interest to pupils is found in the practical character of the work and its construction under conditions which closely resemble those of the trade under commercial conditions. Pupils in trade school enter upon their work for the purpose of learning a trade and consequently their interest is aroused and sustained in almost any type of exercise or project, if they see in it a trade experience which means future economic gain.

On the other hand, the work done in the industrial school, not typically trade in character—such schools as have sprung into existence in great numbers during the past few years to conform to industrial education laws—is carried on in a productive way approaching the commercial trade conditions. It eliminates the distasteful abstract exercise for projects of immediate use to the maker or to others. For the most part, such work is not carefully organized on the pedagogical side to insure a progression of essential tool uses to all pupils. What a pupil gets in the use of tools, either in the trade or industrial school, depends upon the job which the school has to do or the project which the pupil has expressed a desire to make. Whether pupils get from such work a consistent and progressive use of tools or not, is entirely incidental and probably accidental also.

The significant thing for us as administrative officers in such work is the industrially practical problem or the one which is of vital individual concern. The insignificant, and I would say unpedagogical thing about it is the lack of organization of subject matter or teaching material. Pupils may or may not secure a substantial training in all the essentials of the industrial work done in a typical trade.

Considering these two kinds of industrial work—manual training and trade training—still farther, and now giving our attention more particularly to the technical phases or informational side of the subjects taught we may say, at least with a degree of safety, that in the manual training as it was taught up to very recent times, practically all the emphasis was placed upon accurate tool manipulation. In this was thought to be the large educational value. Little if any emphasis was placed upon a study of the trade or large industrial activity represented by the tool work followed. Besides almost eliminating all general industrial information, except that which was directly related to the use of tools, this type of work not infrequently furnished information about tools and their uses which is not accepted in industry as the best.

On the other hand, in typical trade instruction, too often perhaps, the principal information centered about a system of getting out work—the production method as it is called—and conditions under which work is done and made marketable under commercial conditions. Very little information was given about craftsmanship or hand tool processes but rather about form or methods of using tools and machines.

Again, but within a narrower field, I have considered extreme practices, and as in the first instances, for the purpose of analysis to show as clearly as possible the good elements to include and the impossible bad ones to exclude in the best form of instruction in high school industrial arts.

We should be able now to reach a safe conclusion regarding the possibilities and scope of industrial work in the public high school. As I reason, this conclusion is as follows: Industrial work should be offered in our high schools and taken, preferably by all pupils, for at least two years. Such work should be carefully organized as to the method of using tools and machines to



account for a logical progression and development which we expect in all other high school subjects. It should be organized likewise to give the best and fullest information regarding industry, of which it is a part. Such work should not be confined to one class of subject matter, as woodwork, even though different kinds of woodwork are taught, but it should include a few of the typical industries and therefore center in a few generally used industrial materials. The industries and materials to be considered might well be:

I—The woodworking industry and trades in it such as:

- a—Furniture and cabinet work
- b—Carpentry, and
- c—Pattern making

II—The metal working industry and trades in it such as:

- a—Bench and elementary machine work
- b—Sheet metal work
- c—Pipe fitting, and elementary plumbing
- d—Electrical construction

III—The paper industry and trades in it, such as:

- a—Printing
- b—Bookbinding.

To this list might be added such items as:

- a—Cement and concrete work
- b—Brick laying, etc.

It will be seen that this plan centers about units of industry. Just how much time should be spent upon each unit must be determined by local conditions. Each unit, however, should be developed upon the basis of sequential steps in the industry or essential elements in the trade; but, within each industrial step or trade element, all children should not be expected to make the same thing, or necessarily the thing chosen by the teacher.

So much for the organization of subject matter—the work which pertains wholly to the teacher and the administrative officer.

The pupils' part in this whole plan, is to work upon problems which are good examples of the steps in industry and of trade elements as arranged in groups by the instructor, and to secure all the information possible regarding these problems. This information part of our high school industrial work has been neglected too long. It is the part of industrial education which gives breadth of view and a perspective which enables boys and girls to sense the largeness of industrial work and which points the way for them to enter industry (if their future calling should place them in this group of human activities) on the business and directive side as they should, rather than on the manipulative side. When we get this view of industrial work in our high schools, we shall see more in it than mere doing with the hands. We shall see in it education rather than training only and we shall see in it possibilities for future occupations of magnitude and continual growth, because industrial education, such as I am thinking of and have tried to describe, deals with large divisions of occupational interest and labor, rather than with small occupations of hand manipulation requiring varying degrees of skill.

The big question in which you are interested, however, beyond that of the kind of industrial work to establish in the high school, is:—how shall it be administered?

As I see it, this question cannot be answered the same for all communities. It is a question which can be answered only when local conditions are known. To be sure this is true in a way regarding the kind of industrial work to teach, for while the general plan of organization of subject matter would be the same for all communities the particular thing taught or made within an industrial unit or to emphasize a trade element, would be different in an agricultural community from that in a large industrial center. But the ad-

ministration of the scheme might be very different, even within agricultural communities or industrial centers. In general the administrative plans thus far known are:

1—A department within the school, supervised by a specialist who has had both professional training and industrial experience.

2—A co-operative scheme in which pupils alternate between the school and the commercial and industrial plants of the community.

3—A co-operative scheme in which the industry dictates part of the policy of the school and to which it sends from time to time its expert workers to give special or regular instruction and from which it ultimately receives pupils, giving them a definite initial wage, after which reception the school furnishes extension instruction.

4—The Junior High School organization, or one similar to it, in which individual interests are studied and cultivated by means of applying to each individual the particular aid which will further his peculiar interests the most.

Besides the type of community in which a high school is located, the personnel of the teaching force, the kinds of industry carried on in the community, the money available for industrial education,—each or all,—will help to determine the administrative plan to be adopted. Whatever may be the machinery, I am convinced that our high school industrial work will ultimately play an important part in the large program of industrial education provided two things are done:—

1—That typical and important industries be both taught and practised as a result of the best possible analysis of the industrial elements involved, and in accord with the educational practice known and used in the teaching of other subjects.

2—That the educational and industrial interests in a community co-operate in developing the high school industrial work. By some means the co-operation must result in the full utilization of the high school industrial equipment, supplemented by the industrial information and real industrial experience which industry alone can give.

When we view industrial education as a legitimate part of what we have been in the habit of calling general education, and when we realize that it is that branch of our educational opportunities that brings into the school information about and practice in industry we shall give all high school pupils, whether the pupils are preparing for industrial life or not, an industrial education. We shall give it to them as we now give them an academic education—by using the best subject matter we can secure (and this is to be found in industry itself), and by using a method of instruction not inferior to the best known and otherwise used.

## AGRICULTURAL SECTION

The Section met in Room 553 of the Agricultural Building at 9:00 o'clock A. M. Friday, November 24. Mr. Renzo Muckelroy of the Department of Agriculture, Carbondale State Normal School, presided.

Minutes of the 1915 Session were read and approved.

The following program was given:

1. Units of Secondary Agriculture—Loren Brock, Mt. Vernon, Illinois

General Discussion

2. Extension Work in Secondary School Agriculture—Chas. H. Keltner, State Normal, DeKalb, Ill.

Discussion—R. J. Hamilton, Kewanee, Illinois

Much interest and a spirited general discussion accompanied the reading of the above papers.

The Committee on Balanced Courses in High Schools Offering Agriculture was continued to report next year.

The report of the Committee on Library Reference Books was read by Mr. T. R. Isaacs of Decatur. The list recommended for the Agricultural Library is as follows:

Bowman, M. L.	Corn Growing, Judging, Breeding, Feeding and Marketing Waterloo Publishing Company
Montgomery	Productive Farm Crops J. B. Lippincott & Co., 1916
Hopkins, C. G.	Soil Fertility and Permanent Agriculture . Ginn & Company, 1910
Lyon & Tippin	Soils—The Macmillan Company
Plumb, C. S.	Types and Breeds of Farm Animals Lee & Febiger, 1914
Curtis	Live Stock Judging Lee & Febiger, New York
Henry & Morrison	Feeds and Feeding Author, Madison, Wis., 1915
Day, G. E.	Productive Swine Husbandry J. B. Lippincott & Co., 1915
Eckles, C.	Dairy Cattle and Milk Production The Macmillan Company
Bailey, L. H.	Principles of Fruit Growing The Macmillan Company, 1915
Lloyd, J. W.	Productive Vegetable Gardening J. B. Lippincott & Co., 1915
Warren, G. F.	Farm Management The Macmillan Co., 1913
Bull, Sleeter	Feeding Farm Animals The Macmillan Company

The following resolution was presented by the secretary: *Resolved*, That we favor state aid and state supervision for high schools providing vocational courses. The resolution was not supported by the section. A committee consisting of A. W. Nolan, Winfield Scott,



and D. H. Wells was appointed to investigate state aid and supervision for agricultural education in high schools and report next year.

Mr. T. R. Isaacs of Decatur was elected as a member of the executive committee to fill the vacancy made by the expiration of the term of Renzo Muckelroy. Mr. Isaacs was elected chairman. The committee now stands:

T. R. Isaacs, Decatur, Chairman, 1919  
 E. D. Lawrence, McNabb, 1918  
 L. F. Fulwiler, Mt. Pulaski, 1917  
 E. B. Collett, DeKalb, 1917  
 J. H. Greene, Urbana, 1918  
 A. W. Nolan, Urbana, Secretary, 1919.

The Afternoon Session was a joint session with the Physical Science Section. (See Physical Science Section.)

One of the papers read in the Agricultural Section and the one relating to agriculture given in the afternoon joint session with the Physical Science Section are given below:

#### EXTENSION WORK IN AGRICULTURE

By Charles H. Keltner, DeKalb

Extension work is not an important activity of the public school in very many cities. The night schools provide opportunities for those who could not secure the training which is now available through this avenue. Young men attend the lectures on Chemistry and Physics and secure instruction which helps them to greater success in their daily work in the shops; a foreign population finds in the courses in the English language an excellent help to a better understanding of the manners and customs of the people of whom they have so recently become a part; and mothers who avail themselves of the chance to study the problems of the home and family are able to enrich their lives.

As much of the material prosperity of the people of America depends upon the intelligent activity of our farming population it is certainly important that every possible opportunity for intellectual advancement be given to this class of citizens. Holden and others have pointed out the economic effect of getting the corn growers of America to grow one more eight ounce ear of corn per hill. Just now when corn is so high in price meat could be produced much more economically by feeding a balanced ration than by feeding corn alone to hogs as a great many will do because they have not been taught the value of certain supplements which are available at reasonable prices.

One form of extension work is the Short Course. It is good because it generally provides for the farmer an opportunity for him to see and hear a specialist, but it often lacks in the accomplishment of great results because so few farmers attend it. Farmers seem to resent it because they apparently feel that it is an uplift movement thrust upon them and they object to being regarded as in need of an uplift. The short course, like almost any other educational activity for the benefit of mature people, must be an outgrowth of a demand on the part of the people for whom it is offered. Where a group of people feels its own inefficiency and through its own activity seeks aid, constructive, helpful work is possible.

I have sometimes thought that our short courses would be more helpful if they offered a more exhaustive study of some one subject in which the community was particularly interested. Sometimes the lectures are planned to deal with fundamental principles and the more intelligent individuals in the audiences prefer more careful discussions of some of the problems in which they have an active interest.

Home projects, contests and club work are certainly within the field of activity of the school and those who have observed the results of these activities most closely appreciate their importance the most.

In many places the school may render definite, valuable aid to the farmer by testing his cows, aiding him in purchasing cows or other stock and by buying or testing his seed.

That there are problems in connection with the extension of the work of the high school into this broader field is certainly true. Our taxation unit is so small that very often the ones who would receive the benefit from the extension work are not within the territory which is supporting the school and thus it is technically difficult to finance and scheme for the education of those who do not support the high school.

At present a county agricultural advisor may be looking after some of the work which may be called an extension activity. As the county agricultural advisor's work is educational in nature, we certainly should prefer to have it bear some intimate relation to the high schools of the counties in which it is attempted. As the county advisor movement is now closely allied with the extension activities, why should not this educational activity be further correlated with the school system by closer affiliation with the agriculture departments of our accredited high schools?

On the other hand, the school can not move far into this field of work without becoming a competitor of the man whose business it is to buy and sell cows, or deal in farm seeds. He will resent any inroad on what he feels is rightly his field of legitimate activity.

Most of our teachers are always very busy with the arduous duties of the classroom and laboratory and so have but little time for much outside work and the securing of additional teaching force in order to provide for more extension activities is hardly possible. So, all that we can expect is only a very limited amount of time for this important activity.

The work of Mr. R. J. Hamilton, of Kewanee, is interesting and suggestive in that it seems to be a movement which is actually largely a farmer's own effort. He arranges for "meetings" in country school houses in the evenings and goes there with charts which aid in directing the informal discussions in which the farmers of the district engage for several hours. Thus by exchange of views and by incidental instruction by the teacher of agriculture the meeting is one of not a little profit and great interest.

Others are using the county fair in somewhat the same way that the state fair is used as a place for instruction and all who have tried it seem to find it a desirable place to exhibit the products of the organized club work.

It is probable that there is no one plan of extension work which can be used through the entire state but that in each locality the problem must be solved in the manner which local conditions seem to demand. But club work certainly is very feasible and very effective. The very important thing is that we attempt some one thing and try to do it well. As teachers we need a knowledge of our duty and a willingness to do it.

## AGRICULTURAL DEVELOPMENT AS INFLUENCED BY CHEMISTRY

(Read before the joint session)

By Robert Stewart, University of Illinois

It is impossible to assign to any period of human history or to any man the suggestion that crop yields could be increased by the addition of certain materials to the soil. We know that the early Romans, at least, were familiar with the benefit derived from the addition of such materials as barnyard manure, hen manure, which was especially prized; lime, ashes, and the value derived from plowing under legume crops. But the origin of the use of these materials is lost in the maze of human history. No explanation was offered by early writers as to why the addition of such materials was beneficial. Yet, be the origin what it may, the fact remains that many of these fertilizing materials were used by the early Romans. Thus the poet Virgil says:

"But sweet vicissitudes of rest make easy labor and renew the soil. Yet sprinkle sordid ashes all around and load with fattening dung the fallow ground."

While Varo, 39 B. C., wrote thus of the value of legumes:

"A field is not sown entirely for the crop which is to be obtained the same year, but partly for the effect to be produced in the following; because there are many plants which, when cut down and left on the land, improve the soil. Thus lupines, for instance, are plowed into a poor soil in lieu of manure."

While Columella in the first century of the Christian Era writes:

"Some leguminous plants manure the soil, according to Saserna, and make it fruitful, while other crops exhaust it and make it barren. Lupines, beans, peas, lentils and vetches are reported to manure the land. When no kind of manure is to be had, I think the cultivation of lupines will be found the readiest and best substitute. If they are sown about the middle of September in a poor soil and then plowed in (when well grown) they will answer as well as the best manure."

The Romans thus had some rather definite ideas regarding the value of certain materials for increasing the productivity of the soil. It is quite probable that they secured their information, in part at least, from the early Chinese. Mago, King of Carthage, wrote a series of books on Agriculture and especially values the dung of animals as a means of increasing crop yields. The Roman writers refer frequently to Mago's work and they call him "The Father of Agriculture", which would seem to indicate that the origin, at least, of part of their conceptions was obtained from the early Chinese. However, the use of these materials was based upon empirical grounds and the reason for the addition of these materials was not understood, and no conception was given for the mode of action of the materials added.

After the first century A. D. we have little record of any agricultural information or study. During the long period of the Dark Ages no attention was paid, apparently, to agricultural development, or at least there is no written record. Such information as was available was, no doubt, handed down from father to son and became trade secrets to be jealously guarded and treasured. Possibly, some of the problems involved were studied in quiet recesses of the monasteries and remained buried in their archives.

In the 16th century, with the revival of learning, books on Agriculture began to appear. The value of marl, chalk, and wood ashes were known. One writer even began to reason on the mode of action of the materials added to the soil. Bernard Palissey, a potter, in 1516 gives a reason for using wood ashes and ascribes the value of manure to the part soluble in water.

"You will admit," he says, "that when you bring dung into the field it is



to return to the soil something that has been taken away. When a plant is burned, it is reduced to a slaty ash called alkali by apothecaries and philosophers. Every sort of plant without exception contains some kind of salt. Have you not seen certain laborers when sowing a field with wheat for the second year in succession burn the unused wheat straw which had been taken from the field? In the ashes will be found the salt that the straw took out of the field; if this is put back the soil is improved. Being burnt on the ground it serves as manure because it returns to the soil those substances that had been taken away."

In spite of these views and the knowledge regarding the value of various materials there was no development of Agriculture, which remained on the same low plane.

However, thinking men of the time began to speculate and experiment upon the question of the nutrition of plants. Hazy notions began to appear and many began to search for the "principle" of plant growth. Van Helmont, a Flemish chemist, in — thought that he had been successful in discovering this principle. He planted a willow tree in a tub of soil weighing two hundred pounds, and watered it for five years with rain water. At the end of the experiment the tree had gained 165 pounds, while the soil had lost only two ounces. This demonstrated clearly to Van Helmont that the water was the food of the plants. Other investigators such as Boyce supported Van Helmont's views while Bradley held that water could be distilled, while willow trees could not, hence water alone was not the food of plants. Such divergent views could only be reconciled with the knowledge gained later by the applications of chemistry, when with a knowledge regarding the composition of the soil, rain water and air it was demonstrated that all three contributed in the nutrition of the growing plant.

Jethro Tull, in 1731, taught that the soil itself was the food of plants, and the great problem was to make the soil fine enough so it would pass into the plant through the roots. Since cultivation would do this, it was unnecessary to add any material to the soil because cultivation could replace fertilization. As an illustration of the validity of his views he showed where the crop producing power of the soil had been maintained for as long a period as twelve years.

Glauber, however, held that saltpetre was the principle of plant nutrition. This material could be found around the yards and stables where plants were fed to animals and hence could have come only from the plant, which in turn could have obtained it only from the soil. Also, when saltpetre was added to the soil it markedly increased the yield of crops. The value of manure, according to Glauber, was due to its content of saltpetre.

Mayow accepted these views of Glauber and made a study of the amount of saltpetre in the soil. He placed on record the view that it is not found "in soil on which plants grow abundantly, the reason being that all the nitre of the soil is sucked out by the plants".

Digby, as early as 1669, reported that barley was much benefited by a weak solution of nitre, while Evelyn in 1675 said, "I firmly believe that were saltpetre to be obtained in plenty, we should need but few other composts to meliorate our grounds."

Kübel regarded the juices, or humus of the soil, as the food of plants. Boerhaave in his text on chemistry claimed that plants absorbed the juices of the earth. "The prime radical juices of vegetables is a compound from all the three kingdoms via fossil bodies, and putrified parts of animals and vegetables. This we look upon as the chyle of the plant." Thaer, even as late as 1804, was an ardent advocate of this humus theory of plant nutrition. Even Berzelius lent the great weight of his authority to this view.

Wallernious also claimed that humus was the food of plants and that

such substances as chalk and salt acted only indirectly. He claimed that clay helped to retain the "fatness of the land".

The Earl of Dundonald also thought that humus was the true source of plant nutrition. Manures acted both directly and indirectly. He added phosphates to the list of beneficial manures. Alkalies he claimed were generated by plants. Kirwain also in 1796 stated that "alkalies seemed to be the product of vegetable processes for either none or scarce any is found in the soils or rain water."

Home, a Scottish chemist, in 1775 sought "to try how chymestry will go in settling the principles of agriculture." In his work he made some pot experiments and indicated clearly two methods of investigating such problems, viz. pot-experiments and chemical analysis. But he was greatly handicapped by the general lack of chemical information. However, he claimed that there were six factors or essentials of crop production: (1) salts, such as saltpetre, epsom salts, tartar; (2) olive oil; (3) air; (4) earth; (5) fire; (6) water.

The dominant theory regarding nutrition of plants at this time was the humus theory so ardently supported by Thaer. There could be no real progress achieved until more general information in Chemistry was available. The first really important step in plant nutrition was made with the discovery of oxygen by Priestley in 1774. Prior to its actual isolation, however, Priestley had made the observation that plants purified air vitiated by the breathing of animals. But later when he discovered oxygen he failed to correlate the two observations. Bonnet showed that bubbles were emitted from the surface of leaves of plants immersed in water and it was later shown that this gas consisted of the newly-discovered element, oxygen. Ingenhouse showed that light was necessary for its formation, while Senebier showed that the oxygen resulted from the decomposition of carbon dioxide by the plant cells in the leaves. Thus, almost coeval with the birth of modern chemistry, real progress began in the solution of the problems of plant nutrition.

With the development of analytic chemistry and the perfection of the analytical balance definite progress in the solution of the problems of plant nutrition began. The next great important step was recorded in 1804 when de Saussure published his immortal work "*Rescherches Chimiques sur la vegetation*", wherein he brought together his researches upon various phases of the nutrition of plants with special reference to the composition of plant ash and the role of the minerals found therein in plant growth. From his own and previous work, De Saussure taught that the oxygen given off by plants was liberated from the carbonic acid utilized and the great gain in the weight of the plant was represented by the carbon from the carbon dioxide together with the water used by the plant. He determined that the hydrogen and oxygen occurred in plants in the proportion as in water. The nitrogen of the plants was obtained either from the ammonia of the air or from the organic matter of the soil. Most writers of the time lent their support to the conception that the minerals found in the ash of plants, owing to their small quantity, were of no significance. De Saussure clearly demonstrated that there was a definite relationship between the mineral substances found in the ash of plants and the same constituents in the soil. He found that phosphorus, calcium and potassium were always present in the ash of plants and that they were essential to plant nutrition. His work formed the basis for the mineral theory of plant nutrition which is our guiding principle at the present time.

Sir Humphrey Davy, while he made no original contributions to the problems of Agriculture, did much to call attention of leading chemists and farmers to these problems. From 1804 to 1813 he gave a series of lectures on Agricultural Chemistry before the Board of Agriculture in England. He did not accept De Saussure's views regarding the sources of the carbon of the plant but claimed that the plant secured its carbon from the humus of the soil, from oil, soot and manures. Soot carbon was "in a state in which it is capable of being rendered soluble by action of oxygen and water." Lime which was used in ag-

ricultural practice, was of only indirect benefit since it assisted in dissolving the organic matter of the soil. He, however, accepted De Saussure's views regarding the importance and necessity of the mineral elements of plant nutrition.

During this period Thær still maintained that humus was the food of plants. Sprengel, Schubler, and others contributed to the general knowledge regarding plants and their nutrition. Schubler, especially, did some important pioneer work in soil physics. The next important step onward, however, occurred in 1834. Boussingault, a French chemist, commenced systematic field and laboratory studies regarding the problems of plant production. He planned definite, systematic rotations of crops in his field experiments. He made careful analysis of the soils and manures used and the crops grown; and made a balance sheet of the income and outgo of carbon, nitrogen and the ash constituents, the important points under discussion.

The great value and systematic method of the investigation is readily seen from consulting the data presented below.

TABLE I. STATISTICS OF A ROTATION. BOUSSINGAULT.

Crop	Dry Matter	Carbon	Hydrogen	Oxygen	Nitrogen	Mineral Matter
1. Beets .....	3172	1357.7	184	1376.7	53.0	199.8
2. Wheat .....	300.6	1431.6	164.4	1214.9	31.3	163.8
3. Clover .....	4029.	1909.7	201.5	1523.0	84.6	310.2
4. Wheat .....	4208.	2004.2	230.	1700.7	43.8	229.3
5. Oats .....	2347.	1182.3	137.3	890.9	28.4	108.0
Total .....	17478.	81927	956.5	7009.	254.2	1065.5
Added .....	10161	3637.6	426.8	2621.5	203.2	3271.9
Taken from soil or air	7317	4555.1	529.7	4387.5	51.0	2206.4

The data presented clearly demonstrated that the materials added to the soil could not account for the amount of the elements removed in either the ash or volatile part of the plant. Boussingault also clearly demonstrated that certain rotations in which legumes occurred removed more nitrogen than was added in the manure.

#### NITROGEN STATISTICS OF VARIOUS ROTATIONS

Kilograms per hectare.

Rotation	Nitrogen in Manure	Nitrogen in Crop	Excess in Crop Per Rotation	Excess in Crop Per Annum
1. Potatoes, wheat, clover, wheat-oats .....	203.2	250.7	47.5	9.5
2. Beets, wheat, clover, wheat-turnips, oats .....	203.2	254.2	51.0	10.2
3. Potatoes, wheat-clover, wheat-peas, rye .....	243.8	353.2	109.4	18.3
4. Lucerne 5 yrs. ....	224.0	1078.	854.	170.8

These results clearly demonstrated the great excess of nitrogen removed by crops, especially by legumes, such as alfalfa.

The year 1840 again marks an important milestone in Agricultural development due to the application of the laws of chemistry to agricultural problems. Baron Liebig, a German chemist, of well-established reputation, was assigned the problem of reporting to the chemical section of the British Association for the Advancement of Science on the present state of organic Chemistry. He fulfilled his assignment by attempting to show that the science "was so far advanced as to be useful in its practical applications." His report was published as a textbook on "Organic Chemistry in its Applications to Agriculture and Physiology", and met with a warm welcome and rapidly ran through several edi-



tions. While Liebig himself made no original contributions to the solution of the various problems of the nutrition of plants, he did a great service to the work by calling attention to what had been done by others and to the possibilities for future work. He summarized the work of others; adopted and advocated the views of Priestley, Ingenhouse, Senebier, De Saussure and Bous-singault. While some of the views he advocated, such as the value for crop rotation and the source of the plant food element nitrogen, were later proved to be erroneous, nevertheless he did good service in agriculture. By virtue of his commanding personality and great reputation he was enabled to obtain the interest of the scientific world in the problems presented. By means of his vigorous presentation and cutting remarks he gave the death blow to the old humus theory. "All explanation of chemists", he says, "must remain without fruit, and useless because, even to the great leaders in physiology, carbonic acid, ammonia, acids and bases are sound without meaning, words without sense, terms of an unknown language which awake no thoughts and no association." The experiments of the physiologists, he continued, "are valueless for the decision of any question. These experiments are considered by them as conclusive proofs whilst they are fitted only to awaken pity." He maintained that the function of the humus was to evolve carbonic acid which dissolved the plant food. Nitrogen he maintained was obtained by the plant either from the soil or air as ammonia. Later, he became convinced that the plant secured all of its nitrogen from the air. "If the soil be suitable, if it contains a sufficient quantity of alkalis, phosphates, and sulphates, nothing will be wanting. The plants will derive their ammonia from the atmosphere as they do carbonic acid." Liebig's views commanded instant attention of the scientific world, and were the means directly and indirectly of starting some experimental work which is still being continued. In brief, he maintained that 95 percent of the plant was obtained from the air and soil moisture; that a small, though essential part of mineral matter was obtained from the atmosphere. All bases were of equal value. He believed that the crop requirements could be determined by the analysis of the crops themselves. Knop, by means of water cultures believed that he had confirmed Liebig's views. He, however, added iron to the list of essential elements. The mineral theory of plant growth as stated by Liebig is "the crops on a field diminish or increase in exact proportion to the diminution or increase of the mineral substances conveyed to it in the manures," while he states his law of minimum: "By the deficiency or absence of one necessary constituent, all others being present, the soil is rendered barren for all these crops to the life of which that one constituent is indispensable." A definite coherent theory for the guidance of the scientific agricultural world was thus evolved and has been the guide in soil investigations since.

For some time before Liebig's report was made, Sir John Lawes, an English gentleman of means who was interested in chemistry and Agriculture, had become impressed by De Saussure's views regarding plant nutrition. He had made some pot-experiments upon the value of animal charcoal, a waste-product, and bones for manure. He suggested and had taken out a patent for treating bones with sulphuric acid to make the phosphorus more available. The publication of Liebig's report to the British Association seems to have been the deciding factor in Lawes' life and led him to decide on a definite plan of experimentation for the benefit of mankind. Part of his estate of Rothamsted, at Harpendon, England, was devoted to this work. Systematic field investigations were commenced at Rothamsted in 1843, and one of the main lines of investigation was the determination of the source of nitrogen of crop production. Thus, the oldest Agricultural experiment station in the world was established, which is still regarded as a Mecca by all good soil investigators. The work at Rothamsted early demonstrated that the nitrogen of the soil was essential to non-leguminous plants and that legumes acted abnormally. It showed that the beneficial effects of fallowing, which was quite common then in Europe, was due to the accumulation of nitrates in the soil. The work also demonstrated

that the crop producing power of the soil could be successfully maintained by means of artificial manures. The composition of the crop, however, was not always a safe guide. Turnips, beets, etc., contained a small quantity of phosphorus, yet they responded quickly to phosphatic fertilization with markedly beneficial results. The work at Rothamsted led to a warm controversy with Liebig. Liebig maintained that nitrogen in the soil was unnecessary since the plant could get it from the air; from his point of view the mineral elements were the only essential ones. He even got out a patent fertilizer, containing these elements, which, however, failed to produce the returns in crop yields which were expected because of its insoluble character. The work at Rothamsted, on the other hand, demonstrated the importance and necessity of the nitrogen of the soil. This controversy raged until after the death of Liebig with evidence being presented pro and con, and was not entirely settled until the discovery of the fixation of nitrogen by the symbiotic bacteria of legumes.

During this period, 1860, Ville, in France, made some interesting contributions. He claimed that the analysis of the plant was not always a safe guide as to its requirements but that field trials were necessary. He used phosphates, nitrogen, lime and potassium. He found that certain plants required certain foods in greater quantities than others. He evolved his "dominant" constituent theory of plant nutrition. According to him nitrogen was the dominant constituent for cereals, and beets, potassium for potatoes and vines and phosphorus for cane sugar. With respect to nitrogen, he made a fundamental important observation.

Boussingault's early field experiments had indicated a gain of nitrogen by some crops under field conditions. But his direct pot culture experiments had shown no gain of nitrogen. Ville, however, brought forward some experiments in which the plants showed a distinct gain of nitrogen.

These various conflicting views regarding the gain of nitrogen by crops, especially legumes, led to the commencement of rigorous, elaborate experiments at Rothamsted in 1857 in which an American Chemist, Dr. Evan Pugh, took an important part. The previous work of Boussingault and Ville had demonstrated the necessity of the utmost precautions to protect the soil from dust particles containing ammonia. In the Rothamsted work the plants were grown under glass shades and every precaution was taken to render the soil free from contamination, both before and during the progress of the experiment. The soil and pots were burnt and thus all ammonia (nitrogen) removed, and nitrogen, free water and manures were employed in the experiment. The glass shades rested in a groove filled with mercury to prevent unknown air from entering. The air used in the experiment was washed in sulphuric acid and sodium carbonate, and was maintained within the chamber at a higher pressure than without in order to minimize the danger of contaminated air from entering the chamber. The results seemed to definitely preclude the possibility of the fixation of nitrogen by plants. Since three different natural orders of plants were used, the trend of scientific opinion for many years was against the fixation of legumes by plants. Yet there was a number of facts which could not be reconciled with this view, such as the results obtained by Boussingault and at Rothamsted also the fact remained that whenever legumes were in a rotation, there was an excess of nitrogen removed. Lawes and Gilbert were led to believe that the source of this nitrogen was in the deep subsoil which was obtained by the deeper rooted legume plants. Ville and Berthelot in France maintained that legumes secured the greater quantity of their nitrogen from the air, while the experience of practical farmers ever since the early Romans showed the great benefit derived by the use of legumes as a manure.

Nevertheless, Atwater, an American chemist, in 1884, showed conclusively that in case of peas grown in unsterilized sand where the subsoil was eliminated and the nitrogen element of all materials used was known, that there was a distinct gain of nitrogen which must have been obtained by the peas from the atmosphere, either directly or through the medium of the soil. Atwater, how-

ever, failed to make the correct interpretation of his results. He thought that possible lightening or the fixation of nitrogen by the soil, as earlier suggested by Berthelot, had combined the nitrogen into such a form as could be used by the plants.

The whole mystery regarding the source of nitrogen of leguminous plants was suddenly cleared up by the brilliant researches of Hellriegel and Wilfarth in Germany, in 1886. These investigators had been working on the problem for a number of years and finally found that legumes by virtue of the symbiotic bacteria growing in the nodules upon their roots, were enabled to fix the free nitrogen of the atmosphere into a combined form which could be utilized by the higher plants for their growth. And an explanation was thus given for the use of legumes as a green manure crop which had long before been observed empirically.

The next great advance in Agriculture development by the application of chemistry was made at this institution by Dr. C. G. Hopkins and his co-workers. Hopkins taught that the chemical composition of the plant was a guide to its requirements for plant food, and that the great problem of the farmer was to add to the soil in a cheap form those plant foods shown by crop and soil analysis to be actually deficient for maximum crop yields, and also to make provision for rendering the plant food added already in the soil available by means of decaying organic matter. The great mass of facts obtained by him and his co-workers upon this basis form the most important contribution to scientific agricultural development of the present century.

We find, therefore, that by means of the applications of chemistry the knowledge of the nutrition of plants has made wonderful advances during the past hundred years. Instead of speculation, we have definite knowledge. The plant utilizes certain substances which do not cover a wide range. We now know that the greater part of the plant is water and the rest is mainly carbon.

One-half of the dry matter of plants is carbon while the rest is mainly hydrogen and oxygen. Nitrogen is present in about 2 percent while the ash constituents also amount to about 2 percent. In the ash are found sulphur, phosphorus, silicon, chlorine, potassium, sodium, calcium, magnesium, iron, manganese, and traces of substances such as arsenic, iodine, copper, etc. Carbon, however, is the main element in plant economy and the principle business of the farmer is in getting this compound into such compounds as starch, sugar, protein, etc., which can serve as a source of human food. The carbon is obtained from the carbon dioxide of the atmosphere through the agency of the living cell, and by aid of the green chlorophyll. The carbon dioxide penetrates into the cells through the stomata where it is decomposed and united with hydrogen and nitrogen to form the various compounds found in the plants. The energy necessary for this work is obtained from the sun's rays. The conditions necessary for these reactions have recently been subjected to a critical examination. Brown enclosed a leaf, still attached to a plant, in an air-tight box, through which currents of air were forced. He measured the carbon dioxide utilized under varying conditions of temperature and light. Only 1.66 percent of the possible energy was used and he found that the light available on a dull day was more than sufficient for this work. He found further that many factors limited the utilization of carbon dioxide such as temperature, supply of moisture, area of the stomata available and the supply of the mineral nutriment.

Next to carbon the two most important elements in plant economy are hydrogen and oxygen. Moisture is essential not only for the purpose of supplying a medium for transporting plant food and their manufactured products, but also essential in supplying hydrogen and oxygen. In a humid climate the methods of supplying and controlling the moisture are very limited. In an arid region, however, the moisture may be added in the form of irrigation water or controlled by means of the application of the principles of farming.



Chemistry has also taught us that nitrogen is an important element of plant nutrition. It is secured by the plant from the soil or by the legumes, either from the soil or from the atmospheric source by aid of the symbiotic bacteria. It is the most costly element when purchased in the open market. The question of loss and gain of nitrogen in soil has been one of the live questions of scientific agriculture for the past 80 years. Its maintenance in the soil is the most important practical problem in American Agriculture today.

Chemistry teaches us that six of the ash constituents are essential; namely, calcium, magnesium, potassium, iron, sulfur, and phosphorus. These are all the elements normally found in plants except sodium and silica. The necessity of these elements for plant growth had repeatedly been demonstrated both by pot and water cultures. A complete solution for plant growth is obtained by the following combination.

	Grams per litre
Calcium nitrate.....	0.7
Potassimu phosphate .....	0.6
Potassium chloride .....	0.8
Magnesium sulphate .....	0.3
Ferric chloride .....	Trace

When plants are grown in such a solution, they develop normally, but if each is eliminated in turn the plants fail to develop. All the elements of plant food must be in solution; hence, the amount of water which is required by plants is enormous and varies from 200 to 500 pounds of water per pound of dry matter produced. The plant food passes into the plant in accordance with the well-defined laws of diffusion. While the soil is richer in sodium than potassium, just the reverse is true in the plant, because the plant has utilized the potassium in some of its processes. The soil thus serves not only as an anchor for the plant-roots, but also as a reserve for plant food.

Thus the Rothamsted soil has the following composition:

Nitrogen .....	2000 pounds per acre
Phosphorus .....	968 pounds per acre
Potassium .....	4462 pounds per acre

Yet on such a soil only one-third of a crop is grown and the addition of plant food readily brings up the average yield of wheat from 12½ bushels per acre to 37 bushels.

The requirements of a large crop, — bushels to the acre, are as follows:

	N.	P.	K.
Grain .....	71	12	13
Straw .....	25	4	45
Total Crop .....	96	16	58

The chemical composition of the soil and the requirements of the plant would indicate that there is sufficient plant food in the soil to produce much greater yield than this.

Again, chemistry teaches us that the plant food supplies exist in the soil in several different combinations, some available for plant growth, while others are unavailable. The unavailable material can be made available yet only slowly. And in the untreated soil at Rothamsted no provision was made for rendering the plant food available and the natural processes were able only to produce sufficient available plant food for a 12 bushel crop of wheat.

We now realize that the productive capacity of the soil is determined by the power of the soil to feed the crop. And this power is determined by the stock of plant food in the soil and its rate of liberation. The great value of chemical analysis of the soils is to determine the invoice of plant food elements in the soil and thus guide us in the addition of certain lacking elements to the

soil. The rate of liberation is governed by many factors, such as the presence or absence of limestone, the decaying of organic matter, and the presence of soluble salts. We realize what soils do differ in productive power and in Illinois this productive power depends primarily upon the stock of plant and its rate of liberation.

The greatest service of chemistry to Agriculture is probably the production of a definite coherent theory which serves as a guide in our investigations today. A theory may be true or false, but if it is useful it has value. Thus, in organic chemistry the structural theory of organic compounds has had a tremendous impetus on the development of that science. By means of it organic chemists have been literally enabled to prepare and synthesize hundreds of thousands of organic compounds which would probably never have been created but for the guidance of the theory. The theory may be wrong but the facts which have been brought to light by its aid will remain the property of mankind forever.

So with the mineral theory of plant nutrition developed by the application of the principles of chemistry. The large mass of facts developed by its aid will forever remain for the benefit of the human race in its struggle for food supply. The theory may have to be amplified later, but this can in no way detract from its great utility in the development of modern Agricultural practice. The application of the principles of chemistry to Agriculture has placed it upon the high plane where it is at present. And the continued application of these principles will further assist materially in its development.

### BIOLOGY SECTION

The Section was called to order by the chairman, Mr. W. W. Whitney, who called attention to the fact that standardization seemed to be the keynote of the High School Conference.

In the absence of Mr. J. P. Gilbert, Chairman of the Committee on Lists of Reference and Illustrative Material, the report was read by Mr. W. Mattoon.

This report was as follows:

In accordance with instructions from the Conference one year ago, your committee sent out a questionnaire to the Biology teachers of the State. The list of teachers was taken from the bulletin issued by the State Superintendent. We attempted to reach every school in the State, and unless unintentional mistakes prevented, all of you received this communication. Out of more than 500 inquiries mailed, thirty-six replies were received. We had hoped for a much larger response, but we are grateful to those who manifested their interest by offering suggestions. Certainly, on the average, it was the most progressive and up-to-date teachers who replied. But even though the replies were, on the average, from the best schools and the best teachers, there was such an amazing lack of agreement upon reference books, that it would seem imperative that this conference and the High School visitors should take definite and concrete action looking toward specific instructions to the teachers of Illinois upon this subject. Thirty-four answers were given in Physiology.

One book was recommended by 12 persons.

One book was recommended by 9 persons.

Two books were recommended by 8 persons each.

Two books were recommended by 7 persons each.

Two books were recommended by 6 persons each.

One book was recommended by 4 persons each.

Three books were recommended by 3 persons each.

Twelve books were recommended by 2 persons each.  
 Fifty-three books were recommended by 1 person each.  
 A total of 77 books was suggested with the results just stated.  
 Thirty-five answers were given in Botany. These were recommended in addition to the twenty books previously adopted.  
 One book was recommended by 7 persons.  
 Four books were recommended by 4 persons each.  
 Four books were recommended by 3 persons each.  
 Twelve books were recommended by 2 persons each.  
 Seventy-nine books were recommended by 1 person each.  
 This makes a total of 100 different books recommended in Botany with only one book recommended by more than four teachers.

While the Botanists displayed far less agreement than the Physiologists, we believe that those books which did receive the sanction of three or more people are of a higher grade for reference than some of those in Physiology which were sanctioned by a larger number of teachers.

But the Zoologists were not to be outdone by Botanists and Physiologists as you will readily see by the results. Thirty-four replies were sent in.

One book was recommended by 5 persons.  
 Three books were recommended by 4 persons each.  
 Five books were recommended by 3 persons each.  
 Sixteen books were recommended by 2 persons each.  
 Ninety-three books were recommended by 1 person each.

Thus 118 different books were recommended, but only 9 received the sanction of more than 2 persons. Being a Zoologist himself, the chairman of the committee feels that he has a right to ask if any other group can beat the Zoologists for lack of agreement. Over against their failure to agree on many books, however, should be noted the fact that the books recommended are most excellent reference books.

The list of books recommended by more than two persons is as follows:

#### PHYSIOLOGY

Recommended by 12

Hough, Theodore and Sedgewick, W. T. Human Mechanism. Ginn. \$2.40.

Recommended by 9

Martin, H. N. Human Body, Advanced. Holt. \$2.50.

Recommended by 8

Blaisdell, A. F. Practical Physiology. Ginn. \$1.10.

Eddy, W. H. Textbook in General Physiology and Anatomy. Amer. Bk. Co. \$1.20.

Recommended by 7

Conn, H. W. and Buddington, R. A. Advanced Physiology and Hygiene. Silver. \$1.10.

Ritchie, J. W. Sanitation and Physiology. World Bk. Co. \$1.20.

Recommended by 6

Davison, Alvin. Human Body and Health. Amer. Bk. Co. \$0.80.

Overton, Frank. Applied Physiology. Amer. Bk. Co. \$0.80.

Recommended by 4

Walter, F. M. Physiology and Hygiene for Secondary Schools. Heath. \$1.20.

Recommended by 3

Colton, B. P. Physiology. Heath. \$1.40.

Blount, R. E. Physiology and Hygiene. Row, Peterson. \$0.80.

Pyle, W. L. Personal Hygiene. Saunders. \$1.50.



## ZOOLOGY

- Recommended by 5  
Walter, H. E. Genetics. Macmillan. \$1.50.
- Recommended by 4  
Coulter, J. M. Evolution, Heredity and Eugenics. Author. \$0.50.  
Forbush, E. H. Useful Birds and Their Protection. Mass. State Bd. of Ag. \$1.36.  
Howard, L. O. Insect Book. Doubleday. \$3.00.
- Recommended by 3  
Chapman, F. M. North American Warblers. Appleton. \$3.00.  
Dickerson, M. C. Frog Book. Doubleday. \$4.00.  
Ditmars, R. L. Reptile Book. Doubleday. \$4.00.  
Jordan, D. S., Kellog, V. L. and Heath, Harold. Animal Studies. Appleton. \$1.25.  
Smith, J. B. Our Insect Friends and Enemies. Lippincott. \$1.50.

## BOTANY

- Recommended by 7  
Conn, H. W. Bacteria, Yeasts and Molds in the Home. Ginn. \$1.00.
- Recommended by 4  
Marshall, M. L. Mushroom Book. Doubleday. \$3.00.  
Clute, W. N. Agronomy. Ginn. \$1.00.  
Coulter, J. G. Plant Life and Plant Uses. Amer. Bk. Co. \$1.20.  
Pammel, I. H. Weeds of the Farm and Garden. Judd. \$1.50.
- Recommended by 3  
Stevens, F. L. and Hall, J. A. Diseases of Economic Plants. Macmillan. \$2.00.  
Blakeslee, A. F. and Jarvis, C. D. Trees in Winter. Macmillan. \$2.00.  
Coutler, J. M. Barnes, C. R. and Cowles, H. C. Textbook of Botany. 2v. Amer. Bk. Co. \$4.75.  
Ganong, W. F. Living Plant. Holt. \$3.50.

Your committee started an investigation of books as to scientific content and fitness for use by high-school students. We felt that some books recommended in these replies are most excellent works, but entirely beyond the grasp and appreciation of students of this grade. To investigate and make a report worth while, upon the merits of each book requires more time than it was possible for us to give to the task. We feel, however, that such a careful survey of the literature should be made and that a well chosen, wise committee should report recommendations entirely independent of the results of the questionnaire. We regret that our time would not permit us to do this work.

The report indicated that a number of teachers wished to have some reference book on the honey bee. Since these people all suggested different books, the committee would recommend the "ABC and XYZ of Bee Culture" by A. I. Root, Medina, Ohio.

We, also, recommend for Zoology: "Eugenics" by Davenport, "Social Direction" by Hurman, "Evolution" by Kellicott, and "Heredity and Environment in the Development of Man" by Conklin. The above list is useful for the students in Physiology also.

We recommend "The Next Generation" by Jewett, for the Physiology group.

Respectfully submitted,  
J. P. Gilbert,  
Mary M. Steagall,  
W. M. Bailey.

On motion of Mr. J. G. Koons the committee were directed to prepare a minimum list of reference books and also a supplementary additional list with a brief characterization and critical estimate of value of books accompanying in

order to assist teachers in making proper selections when purchasing reference books. It was suggested that a line or two of such charterization and evaluation following each title would materially increase the value of such a list to the biology teacher. In the discussion Mr. Shinn suggested that Phillips, Beekeeping published by Macmillan is a better reference for high schools than the ABC and XYZ of Beekeeping.

Mr. W. W. Whitney, Hyde Park High School, Chicago, discussed the subject of "Agricultural Botany for High Schools". His presentation of the subject follows:

Teachers form one of the most conservative classes of people. They do not like changes in their work of teaching, varying, if at all, only in minor details. Great changes are usually bitterly opposed. In the high school the impress of college methods of teaching is very strong and lasting. For several years it was one of my duties to mark the note books presented by candidates for entrance to the city normal school. The note books done under teachers who were fresh college graduates were readily noticeable, occasionally going so far as to include the usual college type of lectures. Later after interchange of ideas with their fellow teachers had corrected this feature of their work the books reached a sort of dead level, the course customary among the schools of the city with only the personal equation causing more or less variation.

In my own case I was many years getting away from the stereotyped course of study. The thing that caused me to think most seriously of a way out to something better for my course in botany was the necessity or desire to plan a worth-while course for a third semester in botany. What should I do with such a class? I knew from previous experience that an interest in agriculture was quite common among my pupils and this was my cue in providing a third semester course that should not duplicate the first year's work and should still be botanical in its nature rather than the applied science of agriculture. And it is on my experiences with this class as well as with my regular one year classes that I have based the recommendations of this paper.

I wish first of all to discuss some of the underlying principles upon which our work in teaching botany and our course of study are based for if these principles and courses as generally accepted in the schools today are right there is nothing to say. We will go on making minor changes of method and detail but be quite unable to make any serious changes in our work.

One of the most sacred and deeply entrenched ideas among teachers of biology is the type method of teaching botany and zoology in evolutionary sequence. This means, of course, that all other great principles of our science must be taught in a fragmentary way in order to use the evolution sequence. While the doctrine of evolution is fundamental still one may question whether it is right to devote so much of the work of a single all-too-short course to this one idea. Can not the expert teacher convey this lesson in an elementary way, sufficiently vivid for the high school pupil to grasp, without going through the entire sequence? As a matter of fact the chain of evolution is bound to be incomplete from a lack of time to develop it and a lack of ability of pupils of the high school age to grasp the details. Why not be content with the simple advance in complexity seen in the algae for example and the competition and struggle seen in any waste field or vacant lot. The teacher who can emancipate himself from doing things in a certain routine simply because it is customary or because text books present it in this way or some college men think it is the only way is really on the way to become a useful citizen and a joy to his pupils.

Another argument advanced is that certain topics have educational value while other topics, it is asserted, do not have educational value. It happens that the topics thus designated as of educational value are those of the established routine which we have been handed by the influence of the colleges. It is the argument of the ins against the outs. Just what topics have educational value?

Certainly no one class of men is capable of designating them correctly. There are many considerations to be taken into account. The college man is influenced by his surroundings and the needs of the college students which are entirely different from those of the high school. As a matter of fact ideas as to what has educational value are undergoing an evolution, a constant broadening of the horizon. There was a time when the classics and mathematics were thought to comprise all that was of value in the educational field. Our tendency of today is to regard matter of less importance than method in determining value in education.

Probably no two things have been of greater importance in retarding progress and adaptation of our course in botany than these two fetishes of evolutionary sequence and educational value. It has been charged for many years by students of education that the teaching of botany was not getting results. It has been difficult to answer these charges. We are even threatened with total annihilation by our lusty young rival, agriculture.

What can be done about this condition of stagnation into which we have fallen? Some have cast the old course aside and substituted new courses in its place. But there is danger in this, danger that the substituted course will not be well thought out. Rather that it will be spotted and superficial for it is easy to go astray in this direction. I am conservative enough to believe that we have a real science and that it is our mission as teachers to give some conception of the fundamentals of this science in our courses no matter how far apart they may be in other ways. The course, then, must be carefully organized, but not slavish to any conception of logical order which might for example, require the flower to be studied in winter. Perhaps it will be helpful to consider at this point the principles which should underlie the construction of a course in botany.

The principles governing the selection of topics are quickly stated. Those of major importance are: 1. The course must contain the fundamental facts and principles of the science which are within the ability of the pupil to understand and without which the course is superficial. 2. So far as there is a choice, choose topics that relate themselves to the lives of our pupils and explain familiar phenomena. 3. Choose topics and present them in a manner to arouse interest and enthusiasm. 4. The arrangement of the topic should be seasonable so far as practical.

Some factors of minor importance which must be considered concern the adaptation of the course to the locality, the school, and the teacher. These may be enumerated as: 1. The surroundings of the school, including opportunities for field work, collection of suitable material for study. Home opportunities such as garden, farms, and yards. 2. The equipment of the laboratory. This equipment need not be expensive but among the most important are a set of carpenter's tools and a work bench, and cases for storing and displaying of collections. 3. The teacher himself, his limitations and resources are very important. The teacher should have such command of his subject as will enable him to adapt the course of study to himself, his pupils, his equipment and his school surroundings in a way to get the most profitable results. No course should be taken from outside sources and followed slavishly.

Of these factors, both major and minor, which I have enumerated as important in constructing a course of study only one needs further elaboration. The question will be asked as to what the fundamentals are, which must be found in every course in botany. I shall attempt to state these briefly as I now see them. It is here, we shall disagree, if at all. In my opinion, based upon my own experience and study, the fundamentals which should be found in every course, measured by the results of the pupils, are: 1. Ability to recognize the more common plants which are met in every day life and some knowledge of their habits. 2. A knowledge of the gross structure of cell, tissue and organ and their relation to the plant body. 3. A knowledge of the simplest forms of reproduction in the algae and the large details of the pollination in spermatophytes.



4. An elementary knowledge of the advance from simple to complex in plants as seen for example in the algae and a similar knowledge of the competition and struggle for existence among plants as among weeds in waste fields or vacant lots. 5. A working knowledge of the most important of the fundamental processes of plant life such as photosynthesis, transportation of foods and water, etc.

It will be noticed that two common topics found in practically all text books of botany are not included in this list of fundamentals. They are the evolution of the plant kingdom from one group to another and alteration of generations. These two topics are the ones which have bound us to a certain course and made much variation practically impossible. The evolution of groups involved a series that must occupy the major part of any course if taught in a manner to be of any value at all. And as a matter of fact the value derived by the pupils is usually nil. Just what advantages its elimination from the course gives will be better seen in a course of study which I shall discuss later.

The five topics I have classified as fundamental need no discussion in this statement, for all agree on their desirability, but all may not agree, however, in their application in the course of study. The first topic requiring acquaintance with common plants while generally acknowledged as important usually receives such a scant allowance of time that it is of little real value. I have called this work neighborhood botany. In my course it includes some study of trees, shrubs, decorative planting, weeds of waste fields and vacant lots, winter conditions, and the more common wild flowers and fields and woods. While city pupils are less familiar with these plant surroundings, as a rule than country students the familiarity of the country boy and girl is not much more than knowledge of them as objects seen around about them. Judging from my own boyhood experiences on a farm with a father and mother who were lovers of plants the knowledge the country boy has of his plant surroundings is superficial and of little scientific value. For these reasons I place a knowledge of the plant world and phenomena with which the average boy or girl comes in contact as of first importance. It would be just as logical to say that in physiology the pupil need not study the skin, eyes, ears, and teeth, because they are familiar objects.

It will be seen that my appeal is not strictly speaking an appeal for the study of the botany of agriculture, but something broader. It is the plea for emancipation from some things we have been doing which have made our work dull and uninspiring to the average tenth grade pupil. It is a plea for more that is of human interest to the boys and girls in our classes, more that tends to inspire enthusiasm. If we teach the right kind of botany in the right way our pupils gain a love of plants and a desire to know them that will never leave them.

I might stop here with the abstract discussion of our needs, for it is where the usual paper does stop, but I will not, though I am well aware that the minute we proceed to the concrete applications we begin to hit some one's pet topic and are liable to stir up a hornet's nest of protest. But if in presenting a course of study in accordance with the views expressed in this paper I invite criticism and argument, I will have done good. It is stagnation that does harm. It must be remembered that every course in botany must, if it is to be alive to the pupils, be adapted to the needs of the particular situation whether it be country, village, town, or city, the school of 100 or 2500 pupils. So the following course must not be taken as laying down hard and fast topics which may not be modified, but rather as a suggestion of what may be done. Agriculture has been made the central idea of the human interest side of the work because of its importance to all, city and country alike, and because of the crying need of showing that biology is fundamental to agriculture.

The outline of whole year and half year courses which I am presenting must for lack of time be very meager in details. It may be said in general that the order of topics is determined so far as practicable by the season. Very

little preserved material should be used in a high school botanical laboratory. The material should so far as possible be abundant and fresh. The amount of laboratory work is not to be designated but all the topics in the outlines should be studied in the laboratory for the foundation of facts and training in observation and inference. These facts thus acquired should then be confirmed, amplified, and built up into a consistent orderly body of knowledge through recitation and text book.

Some may be misled by the title of my paper into expecting agriculture to be dominant throughout the proposed course. But such persons must remember that agriculture is an applied science, while botany is a pure science. The course as planned is intended to lay the foundations for the application of agriculture. It is not intended to take the place of a course in agriculture, but rather to prepare the ground for such courses, if these courses are given. Where no agriculture is given it will pave the way to rational thinking concerning agriculture and its problems. For the sake of stimulating interest and enthusiasm, some topics, such as seed testing, perhaps more agricultural than botanical have been introduced. They add a very lively interest to the work and are fully justified from this point of view alone.

May I repeat what I said earlier in this paper, that in offering this course of study I am not calling it a finished product. It is suggestive and explanatory of the principles sought to be emphasized in this paper.

### One Year Course in Agricultural Botany

#### *Autumn Semester*

1. *General Outline*:—Variety of plants,—in size, form, manner of growth, number in a given area,—the gross parts of a plant.
2. *Light Relations of Plants*:—Arrangements of leaves, their response to light, why light is important (experiments to show this).
3. *Autumn Flowers*:—In general;—their size, numbers, colors, etc. In particular; the flower,—type, polypetalous, sympetalous, composite; polination.
4. *Trees and Shrubs*:—Characteristics of the more common trees and shrubs—How to identify them. Their good and bad qualities. Care needed.
5. *Decorative Planting*:—Rules governing the arrangement and kinds of trees, shrubs, perennials, etc., to plant. Their care. The lawn. Planting a home yard.
6. *Weeds*:—Weeds as successful plants, their characteristics making for success, their harmfulness, their avoidance, their abundance.
7. *Seeds and Fruits*:—Types of seeds and fruits and their methods of dissemination.
8. *Competition*:—Using weeds as a basis bring out struggle for existence with factors of foothold and food; distribution of plants by areas limited by soil, moisture, etc.; plant associations.
9. *Soil Studies*:—Mineral constituents, origin of mineral and humus constituents, types of soil, drainage, tillage, fertilizers, rotation of crops.
10. *The Cell*:—Its structure and relation to other cells. Cell products—starch chloroplasts.
11. *Algae*:—Increase of complexity of plant body,—cell, chain, filament, plate, etc. Types of reproduction,—division, conjugation, sexual. Nutrition of the cell.
12. *Fungi*:—As dependent plants in their relation to disease and sanitation. Molds, parasitic fungi, yeast, bacteria. The spore in reproduction.

#### *Spring Semester*

1. *Winter Conditions*:—Protective arrangements of trees, herbaceous perennials, annuals. Readiness for growth. Dormancy.

2. *Seeds and Seedlings*:—Seeds as dormant plants, germination, types of seedlings.
3. *Foods of Plants*:—Kinds, storage purposes, value to seedlings and to man.
4. *Seed Testing and Judging*:—Test germination of corn seed. Rules and practice in judging corn. Vitality of seeds, value of tests.
5. *Plant Breeding*:—Variations in wheat heads and corn ears, variation in plants, breeding by selection, hybridization, sports and mutations, laws of heredity.
6. *Garden Planting*:—Plans, successions, hotbeds and cold frames, care.
7. *Roots as Absorbing Organs*:—Root hairs and their work,—types of roots in relation to absorption.
8. *Structure and Work of Root, Stem and Leaves*:—As organs of transportation, support, and food manufacture.
9. *Economic Uses of Root, Stem and Leaf*:—Food storage, wood structure, types of woods, commercial uses.
10. *Propagation*:—Natural and artificial methods of producing new plants by vegetative reproduction.
11. *The Flower*:—Parts and function of a flower. Types of flowering plants,—gymnosperm, monocotyl (including a cereal), dicotyl.
12. *Wild Flowers*:—Their succession, distribution, regional habit. Use of simple key.

### Half Year Course in Agricultural Botany

#### Spring Semester

1. *The Plant a Living Thing*:—The cell, tissues, organs, types of reproduction—using onion skin, elodea leaf, algae, and a flower. The work of a plant as a living thing,—respiration, transpiration, and photosynthesis.
2. *Winter Conditions of Plants*:—Protective arrangement of trees, herbaceous perennials, annuals. Dormant conditions. Readiness for quick growth in spring.
3. *Seeds and Seedlings*:—Seeds as dormant plants. Germination. Types of seedlings.
4. *Food Storage in Seeds*:—Tests of foods in seeds. Use of storage to the seedling, digestion of food.
5. *Seed Testing and Judging*:—Tests of germination of corn—Vitality of seeds. Judging seed corn.
6. *Roots as Organs of Absorption*:—Study of root hairs and their function. Osmosis. Other arrangements of roots for absorption.
7. *The Work of Roots, Stems and Leaves*:—Larger details of structure to be studied sufficient for understanding the functions. Demonstrations of functions.
8. *Economic Relations of Plants*:—Useful,—food storage and its uses, structure and types of woods and their uses to the plants and man, useful fungi. Harmful,—parasitic fungi and bacteria in relation to diseases of plants and man and to sanitation. Weeds.
9. *The Soil*:—Origin of soil, mineral and organic constituents, drainage, tillage, fertilizers, rotation of crops.
10. *Gardening and Decorative Planting*:—Garden planning. Beautifying the home surroundings. Characteristics of common trees and shrubs.
11. *The Flower and Wild Flowers*:—Types of flowers including dicotyls and monocotyls. Wild flowers and their regional distribution. Plant associations.
12. *Plant Breeding*:—Study of variation in some plant as for example—wheat. Breeding by selection and hybridization. Sports and mutations. Laws of heredity.



In the discussion following Mr. Whitney's paper decided difference of opinion was expressed as to the advisability of emphasizing such topics as alternation of generation. Several preferred to stress such practical topics as landscape gardening and care of a lawn. It was suggested that in answer to those teachers of agriculture who objected to the teaching of practical topics related to agriculture in the botany course that they be requested in return to refrain from teaching topics related to botany in the agriculture work.

Miss Rice, Decatur High School, described an experiment which she made in the Decatur High School in which the work in three different classes was treated in different ways. In one class agricultural botany was emphasized, in another evolution was emphasized, and in the third class just the common plants of the pupils' environment received most attention. The latter plan proved to be the most successful one.

Miss Mabel E. Smallwood, Lane Technical High School, Chicago, Mr. E. W. Mattoon, Township High School, Murphysboro, Mr. C. P. Shideler, Township High School, Joliet, and Mr. T. L. Hankinson, State Normal School, Charleston, were appointed as a nominating committee to report at the afternoon session. Mr. C. P. Shideler was appointed to report for the Section at the General Session of the Conference on Saturday morning.

An illustrated talk on "Studies in Bird Life with the Camera" was given by Mr. Ralph E. Wager, State Normal School, DeKalb. It is impossible to adequately report such a talk in this connection. One can only partly appreciate it from the following paper.

The use of the camera in the making of photographs of wild life is a form of field work in which any teacher of biology may indulge with profit both to himself and his classes.

This is so because the forms to be studied must be encountered in their native haunts, and the photographer must learn where, when, and under what conditions he is most likely to find them, and, having done so, how to deal with them. All of this means a study of Nature in a face-to-face fashion, and not through the screen of the words of a book. It is this spirit of earnest investigation and search after the truth which must animate the good teacher of biology. Then, too, the photographs obtained may be made into lantern slides and used to stimulate interest in the great world of interesting things which lies all about us. The results of this form of photography are, then, useful not only to the teacher, but are reflected back upon the pupil.

No matter what is to be photographed, the outfit to be used must be of the best in order to obtain commendable results. This is true because much must be done under adverse conditions even at the best, and to gamble one's time and effort against an occasional success is unwise. The photograph of a wild flower must frequently be made under poor lighting, and that of a bird made in the wind when only the best of lenses can give a clear-cut negative. A high-grade anastigmatic lens is, therefore, indispensable. The camera itself

may be of any sort so long as it is provided with the necessary feature—the swing-back. This enables one to bring into focus the foreground of the picture, or, if focusing on an object like a plant, whose top would thus be brought nearer the lens than its base, to bring the whole plant into a clean focus. Add to these elements a knowledge of various brands of plates, and their especial uses, and the value of a color-screen under certain circumstances, and excellent results may be expected. I am assuming, of course, that the user is acquainted with the elements of the process of development, exposure and composition, each of which is important. Use only the best of everything you can get.

Now the uses to which the camera may be put are numerous. Wild flowers may be taken showing their habits of growth, and something of their ecological relations. Life histories of insects are most interesting and instructive, including all stages—larva, chrysalis and adult. Spiders, their webs, and habits of catching prey are obtainable. Trees showing manner of growth, character of bark, fruits and leaves make excellent and useful subjects. One may even use his camera (by removing the lens) for the purpose of obtaining microphotographs. The range of subjects is unlimited. One of the most enticing fields however, is the photography of birds. This requires a special equipment for the exposures must be made with the operator at some distance. With a pneumatic shutter a long  $\frac{1}{8}$  in. rubber tube with a bulb taken from an atomizer, may be used up to distances of 30 to 40 ft. Beyond these distances so much time is used in transmitting the impulse that its use is not advisable. Better still is an electric attachment which one may readily make out of a large electric bell. A thin piece of board may be cut to fit the shutter, and to it is then attached the solenoid and lever in such a manner that the latter trips the shutter when the contact is made. The whole apparatus may be clamped to the front frame of the camera by the use of metal strips bent so as to form a firm clamp. The accompanying illustrations show the manner of construction as well as the manner of attachment. With the electric release one must carry a battery of dry cells. I find that at least five are necessary to operate successfully at distances of about fifty feet.

Birds lend themselves most easily to photography by one of two methods: by enticing them to a predetermined place by placement of food, and by relying upon the nesting and brooding instinct to bring them repeatedly to the spot on which the camera is focused and the photograph made.

In the former of these two methods a short piece of a limb four inches, or thereabouts, in diameter, is mounted upon a short upright, and a hollow made in its upper side in which millet or other seeds may be placed in order to attract the birds. It is not long, ordinarily, if the feeding station be properly placed, before the birds become accustomed to come in considerable numbers. A black box, about the size of the camera, should then be placed near the station, and when the birds become somewhat accustomed to it, substitute for it the camera. Attention should be placed upon the matter of focusing the camera upon the plane in which the bird is likely to be when feeding. Should the bird refuse to come into the plane chosen, it is needless to make the exposure. In this manner only the seed eating birds are obtained, but the range of subjects is considerable, and the sport of it enticing. In a similar manner, by using meal-worms or suet in place of the seed, the woodpeckers and nuthatches may be brought into focus.

In the other method the camera is focused upon the nest, and the exposures made either while the parent birds are upon its edge, or brooding the young. Indeed, most of the family activities of birds are obtainable in this way. But here, as in the other case, the birds must be accustomed to the presence of a strange object, like the camera, or they may be frightened and leave the nest entirely. This is particularly true if the attempt be made in the early periods of the nesting activities. When the young are well grown it is less likely to occur, and less damage may result if the parent birds remain away for some length of time. I have found it advantageous to begin as soon as a nest in a

suitable site is found, and place near it a box the size of the camera. Mount it upon a tripod to resemble the camera. Thereafter make it a point to pass frequently near the nest and gradually accustom the bird to your presence. If the birds return readily when one is near the nest it is probable that they will take to the ordeal without much difficulty. However, one may not predict what the reaction shall be when the camera is set up. It frequently becomes necessary to give up the undertaking entirely lest the birds forsake both nest and young. This is true also with reference to the box; it should at first be some distance from the nest, and gradually brought nearer. If the nest be so high that this method cannot be used, the camera or box may be placed upon a stepladder, or other contrivance, and the process carried on in the same manner. It will be found that birds, like people, differ greatly in temperament; some are easily frightened, while others are confiding and trustful. This makes the process all the more interesting. It may be worth while to suggest that birds which nest near human habitations, like the robin, catbird, chipping sparrow or brown thrasher, are best to begin upon. They are less easily frightened and become accustomed to the camera in a relatively short time.

One should not embark upon these undertakings unless he is prepared to spend hours and days afield, unless he can withstand manifold disappointments and insuperable obstacles. He must find much of his compensations in the intimate acquaintance he makes with the objects of his study, while the photographs are a material reminder of his pleasant associations. It is worthy of note also that these pictures are valuable not only for their photographic excellence but more so as scientific records of the varied activities of some of Nature's children.

A series of lantern slides was used to illustrate the processes described as well as the results obtainable by them.

At the afternoon session the following officers were elected for next year: Mr. W. W. Whitney, Hyde Park High School, Chicago, Chairman; Mr. J. L. Pricer, State Normal School, Normal, Secretary; Miss Celestine Rice, High School, Decatur, member of Executive Committee.

Next followed an Introductory Statement of the Work of the Committee on Sequence and Minimum Content of Biology Courses in the High School by Mr. Harold B. Shinn, Carl Schurz High School, Chicago.

The Committee on Courses of Study for Physiology, Botany and Zoology would remind the Section that following the recommendation of Mr. Didcock at the Conference in 1915 a motion was carried that this committee be appointed. After some loss of time in determining procedure courses were formulated and sent from Mr. Hollister's office to 186 high schools. The purpose of these outlines is not to arbitrarily fix a course of study for any school but rather to offer a basis of suggestion and criticism. Replies sent in from the various teachers should indicate their ideas as to time to be allowed the topics, their order in the entire course, and the acceptance, rejection or revision of the topics. From these tabulated replies the committee hopes ultimately



to find out what Illinois teachers regard as *minimum* essentials in each subject.

The importance of the work is evidenced by the financial backing afforded by the Visitor's Office. Its value can be made very great by the cooperation of all teachers concerned. Something of this value is stated in the general introduction to the outlines sent out. After each individual report has been heard the Section may vote that the Committee and its work be discontinued or else may vote their continuance. In the latter event we hope to continue our inquiries among progressive teachers elsewhere, as well as in Illinois, and to offer a report next year ready for final adoption.

Specific statements concerning the treatment proposed for each of the three subjects,—physiology, botany and zoology,—were sent out to the teachers of Illinois high schools together with outlines of proposed 18 weeks courses as given below, and with a tabulated sheet for criticisms and suggested changes. A general introductory letter accompanied the courses and blanks sent out. This letter follows, and also summaries of replies with the suggested courses:

Chicago, Ill., Oct. 23, 1916.

Dear Fellow Teacher:

You are doubtless aware of the fact that leading educators everywhere have been telling us for several years that one of the greatest needs in education is the determination of what are known as "minimum essentials" in the various school subjects. We need to know those facts and principles in every school subject which deserve to be honored by being taught to every child who pursues the subject. If these things can be determined in any satisfactory way, we will then all teach the essentials, and the unification of courses and the administrative and social advantages that would follow such a reform will be accomplished.

The problem of "minimum essentials" in biological sciences is generally recognized by Illinois teachers today as being complicated by the following phases or corollaries:

1. The existence of great disparity in the content of half-year and year courses in Physiology, Botany, and Zoology and a consequent disparity in values and efficiency.
2. As a resultant of the above condition, there is the heterogeneity of the first year college class and the duplication of High School work in an attempt to "level" the class and start them together on their college work.
3. The unpedagogical practice of giving to High School pupils diluted or modified college work, with a college view point.
4. The lack of a standard *minimum* for which or upon which all state schools shall build, and the consequent doubt in mind of the young teacher and the university examiner as to what should be done and what should be expected.

It is probably the work of a generation to determine the solution of these problems, and as time passes and conditions change, it will need to be constantly re-determined, but the difficulty of the problem should not deter us from making an attack on it if there is a reasonable prospect of our being able to make progress toward a solution.

The Biology section of the Illinois High School Conference voted unanimously at its last meeting to make an attack on the problem for the biological subjects in the high school. A committee was appointed and provided with funds to make a preliminary investigation. It is the plan of the committee for the present year to try to determine what is the present current opinion of the biology teachers of the state as to the subject matter that should be included in half-year courses in Botany, Zoology, and Physiology. We hope to find how much of agreement or lack of agreement exists among us as a body, as a basis on which to start to determine the things in which we should all agree. Consequently, however humble an opinion you may have of your judgment on the question, remember that it is your opinion that we want. We hope to have a reply from every person in Illinois who is teaching any or all of the subjects in a high school. Please do not put the conference to the trouble and expense of making a second request for your report.

After careful study, thoughtfully fill out the blanks for each of the three subjects you are teaching. Give us your best judgment. Sign the report, place it in the enclosed stamped and addressed envelope and mail it to the chairman.

Faithfully yours,

H. B. SHINN, Schurz High School, Chicago, Chairman.

G. J. KOONS, Murphysboro, Ill.

J. L. PRICER, Normal, Ill.

Committee.

#### OUTLINE FOR EIGHTEEN WEEKS COURSE IN PHYSIOLOGY

##### I. *General Introduction. One week.*

Importance of study. Brief historical account of subject. Scope and division of subject. Physiological division of labor. Structure determined by function. Kinds of tissues. The cell. Structure of the cell and common tissues should be demonstrated with microscope or lantern.

##### 2. *Foods. One week.*

Necessity. Kinds. Sources. Composition and energy content of different kinds. How detect adulterations. Safe methods of storing and preserving. Selection and preparation. Correct diets. Dangers in milk and water supply. How secure pure water and milk supplies. Is alcohol a food?

##### 3. *Digestion. Three weeks.*

Purpose. Structure and function of organs. Secretion and action of digestive ferments. Process; in the mouth, swallowing, in the stomach, in the intestines. Importance of careful mastication. The teeth. Oral hygiene. Absorption. How digested food reaches the tissues. Lymph. How keep digestive organs in good working order.

##### 4. *Circulation and the blood. Two weeks.*

Composition and function of different parts of the blood. Structure and functions of organs of circulation. Course of the blood through the body. Lymph and lymphatic vessels. Control of blood stream. Fainting. Influence of alcohol on temperature of the body and the circulation. Demonstration of circulation in frog's foot, or tadpole's tail.

##### 5. *Respiration. One week.*

Purpose. Necessity of oxygen. Organs of respiration: structure, adaptation, and function. Breathing. Exchange of gases. Artificial breathing. How revive drowned. How revive suffocated. Internal respiration. Method of ventilation. How house-heating system affects ventilation. Nature of "bad" air. How may we tell good air. The sleeping room.

##### 6. *The Skin and Elimination of Waste. One week.*

Functions of the skin. Structure. Kidneys. Hair and nails. Attention to personal habits. Pigment. Common diseases of the skin. Inflammation. Corns. Warts.

7. *Supporting Tissues. One week.*

The human skeleton. Structure, composition and growth of bones. Articulations. Levers, Importance of correct posture in sitting. Misshapen feet.

Muscles. Kinds and structure. Training and development. Connection with nervous system.

8. *The Nervous System. Three weeks.*

Position, Parts. Structure and function of different parts. Reflex action. Hygiene of nervous system; rest, play, sleep, principles of habit formation. Tobacco habit. Drug habits. Pain. Nervous disorders. Mental hygiene.

Special senses. Structure and function of organs. Special attention should be given to hygiene of the eye.

9. *Home and Public Sanitation. Four weeks.*

a. Organisms that cause disease. Bacteria; Classes, form, size, reproduction, conditions favorable for growth, conditions unfavorable for growth. How they get into the body especially in typhoid fever, hydrophobia, tetanus, tuberculosis. Disease caused by organisms other than bacteria; pyorrhea, malaria, ringworm, thrush, hookworm.

b. Hygienic and sanitary measures based on knowledge of parasites causing disease. Food preservation. Disinfection. Vaccine and serum treatment. Protection from and elimination of flies and mosquitoes.

c. Prevention of disease by the individual. Fresh air. Pure foods. Pure water. Healthful exercises. Sufficient sleep. Cleanly habits; dangers of dust; proper methods of sweeping and dusting; treatment of wounds; cooperation with civic authorities.

d. Prevention of disease by civic authorities. Care of streets. Public places. Public water supply. Sewage and drainage. Supervision of sale of milk and other foods. Quarantine. Disinfection. Medical inspection of schools.

10. *Sex Hygiene. One week.*

This can be best handled by dividing the boys and girls and having a series of talks by physicians on the subject. A woman for the girls, and a man for the boys.

### A TENTATIVE OR SUGGESTED HALF-YEAR COURSE IN ZOOLOGY

The reasons for suggesting the following zoology course to the teachers of Illinois are so generally recognized that no argument regarding them is necessary. Recent surveys of courses given in various states and localities and recent analyses of examinations and of texts show a heavy preponderance of attention to morphology, physiology, and evolutionary theory, with a dearth of work upon ecology, natural history, economic and domesticated forms. That such mode of treating zoology and of training pupils is unfair or unsatisfactory is evidenced by the widespread agitation in the matter and by the existence of this and many other committees, national and local.

It is our belief that there are three great animal groups upon which or around which the zoology course should be built. These are of prime economic importance, they are capable of laboratory treatment anywhere, they each illustrate the great problems of animal existence and they engage the active interest of every pupil. These groups are mammals, birds, and insects, and we suggest that they receive at least one-half the total class time in the course.

In order that the foregoing "trinity" receive the time suggested it will be necessary that the other groups ordinarily considered be less intensively studied than they usually are. For example, coelenterates and sponges may be read about and discussed in class; flat and thread worms may be used merely because of their economic parasitic forms.

This method of treatment will require a more concerted use of the textbook so that the work at times will become merely supervised study. It will



produce a less voluminous note-book, one containing fewer beautiful drawings and fewer attenuated written exercises; less "busy work". On the other hand the note-book will contain only exercises of proven value, such as really illustrative drawings or diagrams of things not pictured in the text-book, paper models or manikins of anatomical parts, photographs of ecological features, and summaries.

The suggested course is deemed fair to the subject because it covers the field and also fair to the pupil because it does not emphasize non-essentials. It is doubly adapted to the seasons, utilizing insects in the warmer months and mammals in the winter. It follows in part the evolutionary order, being thus adapted to the teacher whose mind or training requires a logical sequence. While it calls for a certain work which is not found in any text or manual now published, yet this work has been given in some schools for several years and the committee will gladly furnish outlines of these exercises to any who desire them. Furthermore, the course directs the pupils attention countryward rather than cityward in its emphasis, and is readily adaptable to agricultural high schools. And finally it is definite only as a working outline, leaving the teacher free to present the details of each topic as he may choose. It endeavors to standardize the course only as to essentials.

*An Eighteen Weeks Course in Zoology, Beginning in September*

*I. Insects. Four Weeks.*

Major Morphology and physiology of one form of local importance, as locust, bee, fly, mosquito, or a true bug.

Minor Type studies based upon the major as to:

1. Morphology: Adaptations to aquatic, burrowing, terrestrial, aerial, predaceous and other habits.
2. Modes of development.
3. Feeding habits and means of treating insect pests.
4. Economic forms or products; polination; disease transmission.
5. Preparation of economic, life-history, or type collections of "coloration" boxes, of habitat photographs, or of local sanitary maps or charts.
6. Anatomy, internal, is best taught by means of paper models.

*II. Spiders. Two days. Natural history and development.*

*III. Birds. Three weeks.*

1. Recognition of 25 common forms; field observation, construction of nests, boxes, etc.
2. Migration.
3. Economics of various wild types.
4. External and internal morphology as adapted to flight.
5. Plumage.
6. Structure of the egg and utility of its form.
7. Formation of the egg and story of its development.
8. Poultry (fowls and pigeons) Types and breeds can be used in school or visited. Home projects are valuable.

*IV. Protozoa. One week. Cell anatomy and activity.*

These studies, introduced through insects, should be more carefully treated than any others in the course to be efficient and brief. A paper "cut-out" of a cell is very graphic.

*V. Sponges. One day.*

Commercial fisheries, to be studied by means of the text or encyclopedia as informational reading, with museum specimens.

*VI. Coelenterates. One day.*

Studied as for sponges, the class to prepare paper cut out to show anatomy.

*VII. Flat and Thread-Worms. Three days.*

Vinegar eel furnishes living material. Other forms may be used as museum material and life-histories taught by means of diagrams.

*VIII. Earthworm. One week.*

External and internal morphology to be used as a basis for study of the physiology of a simple animal. Preparation of a paper model again quickens interest and makes structure plain.

*IX. Crustacea. Three days.*

Living crayfish shows segmentation plus protection. Lobster and crab fisheries studied as in sponges.

*X. Myriapoda to be studied one day or more.*

*XI. Molluscs.*

One week internal morphology only, with life-history, ecology, or economics, as oyster and pearl fisheries and button manufacture.

*XII. Fishes.*

One week studies in ecology, adaptation and natural history.

*XIII. One week life history of frog and adaptations for double life while adult (circulation).*

*XIV. Reptilia.*

Two days studies as for sponges.

*XV. Mammals. Four weeks.*

1. Rodents (rat or rabbit) may be used to show relation of teeth to diet, edibility, disposition, home habits, death rate and birth rate.

2. Ungulates (cow, horse, sheep or pig) illustrate methods of breeding and genetics, beasts of burden, sources of food, gregariousness and ease of domestication, means of defense, coloration, etc. Families may be discussed as for sponges.

3. Carnivora. A dog show conducted in the laboratory serves to add interest to the course and to exemplify types and breeds and natural history.

4. Primates. By use of texts and reference books types are studied, with prehistoric man and the factors contributing to his development and supremacy. Geographic distribution of races.

5. The minor orders may be studied very briefly, as for sponges.

The above studies on mammals should be illustrated by as many living and mounted specimens as can be secured; by skeletons, skulls and teeth; by pelts or manufactured products; by lantern slides, magazine articles, bulletins and reference books. Regional maps showing the wild forms known to be within the school district may be made and records of observations kept, as for birds. A cream separator can be borrowed or visited. A Babcock test secured, and butter churned in a cream whip and samples passed through class on soda crackers. Considerable field work can be done as individual projects or class trips; muskrat lodges, beaver meadows, mouse tunnels beneath the snow, tracks, and burrows are legitimate material, as well as local dairies and creameries.

## PROPOSED TOPICS FOR HALF-YEAR COURSE IN BOTANY

The topics in this outline constitute more or less of a continued story. Each lesson prepares for the next and in turn, throws some light on preceding lessons. It is assumed that in most cases the course will be begun in February, and most of the materials required for laboratory study are easily available in the winter. If materials for the latter part of the course are collected and preserved in season, there is nothing to hinder beginning the course in the fall. A few flowers to start with can usually be secured in the winter from a green house or other source. There is great advantage in beginning the story of reproduction with a study of a few flowers.

In a half year of 18 weeks, 90 lessons may be taught. Some of these lessons may cover double periods and others single periods. Probably one lesson a week should be given to reviews, quizzes, and examinations. This leaves 72 lessons for advance work. Consequently, we have proposed seventy-two lessons.

## TOPICS

No.	Number of Lessons	
1	3	Structure of a typical flower including the ovules and their parts. Complete mastery of all terminology.
2	1	Pollination and the relations of flowers and insects.
3	2	Study of fruits as a bean pod, apple, corn kernel and cockle bur. Trace relations of parts to those of the flower.
4	2	Study of seeds, such as bean, corn, castor bean, and pumpkin, tracing relations of parts to those of the ovule. Teach also, parts of the embryo.
5	1	Study of foods stored in a corn kernel, including tests for starch, fats and proteins and microscopic examination of thin sections. Note that the food is stored within the cells of the seed, usually in soluble forms.
6	1	Study of the process of starch digestion, using germinated barley grains and a one-half percent starch suspension. Test for the disappearance of starch with iodine solution and for the appearance of sugar with Fehling's solution. Compare with animal digestion.
7	1	Demonstrate the process of respiration in germinating seeds and the property of delayed germination in such seeds as the cockle bur, lupines, and clover. Significance of delayed germination to the species.
8	2	Study of various means of seed dispersal. Variation in the size of seeds and the enormous production of seeds by some plants. Secure a large pigweed in full seed, thresh out the seeds and estimate their number by weighing and counting the number in a single gram. (This should be done in the fall.)
9	1	Comparative study of seedlings of such plants as bean, corn, pumpkin, and castor bean. Identify parts of the embryo in the seedling.
10	2	Study of the orientation of plant organs. Seedlings of the sunflower or other convenient plant may be used to illustrate geotropism, phototropism, and other tropic responses. Make sure that the pupils understand that these phenomena are the result of stimulus and response and not the result of a push or pull. Make comparisons with cases of stimulus and response in the human body.
11	1	Study of roots and root hairs. The roles of the root system, methods of branching in roots. Contrast with stem.
12	1	Demonstrate the process of osmosis and apply it to the



## TOPICS

No. Number of  
Lessons

- absorption of materials from the soil by root. Teach chemical elements taken from the soil by plants.
- 13 2 External structure of stems, including methods of branching and elongating the axis, and bud arrangement. Homologies of thorns, prickles, and tendrils. Stems of rosette plants and climbing plants.
- 14 3 Microscopic study of a cross section of some woody stem such as *Aristolochia*. Also study the stem of some monocot such as corn.
- 15 1 Microscopic study of wood structure, including the decorative features of finishing and furniture woods and the fitness of different kinds of wood for different mechanical uses.
- 16 2 Proper method of trimming or pruning of trees. Callous growth on grounds. Budding and grafting. Relation of the cambium to these processes.
- 17 1 External structure of leaves. Different forms of leaves. Leaf arrangement for light exposure. Tropic responses. Light exposure in grasses and rosette plant.
- 18 2 Microscopic study of leaf structure, including a study of the epidermis with its stomates and a study of a cross section of some leaf such as the India Rubber leaf plant.
- 19 2 The process of photosynthesis. Demonstrate the need of light, carbon dioxide, and a suitable temperature. Show that oxygen is a waste product of the process. Contrast with respiration.
- 20 3 Translocation and storage of food. Advantages gained by biennial and perennial plants by the storage of foods in roots and stems at certain times and the rapid use of such food at other times. Advantages to man of the concentration of foods in storage organs. Definition of food. Dependence of all living creatures on the green plants for food.
- 21 2 Transpiration. Loss of water the great danger to plant life. Structural features which enable plants to expose enormous surface to the drying air. Cutin, cork, and the vascular system. The transpiration current.
- 22 3 Study of algae. Lack of cutin and vascular system and consequent small size, and confinement to moist places. Microscopic study of *Gloeocapsa* and *Oscillatoria*. Method of reproduction.
- Study of *Ulothrix* and its methods of reproduction. Primitive sexual reproduction.
- Study of *Vaucheria* or of *Oedogonium*. Sex organs. Economic relations of algae. Food for water animals and harmful in water supplies.
- 23 4 Study of bacteria. Microscopic study of different forms of bacteria as found in hay culture. Inability to manufacture food. Powers of digestion and absorption of food. Method and rate of multiplication. Conditions favorable and unfavorable to growth. Parasites and saprophytes. Disintegration of organic matter and return of fertility elements to the soil. Relations to soil nitrogen. Methods of preventing bacterial action. Canning, drying, treating with chemicals, etc. Relation to animal diseases.
- 24 1 Study of Yeast. Microscopic study of budding cells. Demonstrate the production of carbon and of alcohol. Distin-

## TOPICS

No. Number of  
Lessons

- guish between fermentation and the nutritive process. Wild yeast and cultivated yeasts. Uses of yeasts in fermentative industries. In the making of bread.
- 25 2 Study of molds. Microscopic study of several different kinds of mold such as *Mucor*, *Rhizopus*, *Pennicilium*. Methods and enormous powers of reproduction. If possible, demonstrate the presence of mold spore in the air by culture methods. Digestive and absorptive capacity of molds. Means of control. Inoculate a sweet potato with *Rhizopus*, and note how quickly it brings rotting about.
- 26 1 Study of Mushrooms. Study the structure of several different types of mushrooms. Note how the spores are borne and their number. Relations of the fruiting body to the mycelium. Identify a few forms of edible mushrooms. Teach the structure of the deadly *Amanita*.
- 27 2 Study of powdery and downy mildews. The white rust on the pig weed or the downy mildew on the grape will answer for the latter and the powdery mildew on the lilac will answer for the former. Note the methods of reproduction in each and thus distinguish between ascomycetes and phycomycetes. The mushrooms will illustrate basidiomycetes. Material for the mildews should be collected in the fall. It may be kept in a dry state or in liquid preservatives.
- 28 2 Study of rusts and smuts. Work out the life history of wheat rust. Other rusts, such as asparagus rust and bean rust, should be noted. Similarly, study the life history and means of control of some grain smuts.
- 29 1 Study of liverworts. Work out the life history of *Marchantia*, including the alternation of generations. Note the structure of the gametophyte. Lack of cutin and of a vascular system. Consequent limitation to small size and to moist situations.
- 30 1 Work out the life history of some common moss including the alternation of generations. Note that the sporophyte is larger comparatively than in the case of the liverworts and that it is approaching independence.
- 31 2 Study of ferns. Work out the life history of some common fern, including the alternation of generations. Note the independent sporophyte, true roots and vascular system. Large size of the plants correlated with structural features.
- 32 2 Study of reproduction in Gymnosperms. Use the cones of the Austrian pine and work out the life history including the alternation of generations. Note that the female gametophyte is still a many celled structure and forms the endosperm of the seed surrounding the embryo. Make clear the fundamental identity between reproduction in seed plants and in seedless plants.
- 33 2 Study of reproduction in Angiosperms. Work out all the details of pollination development of male and female gametophytes, double fertilization, development of embryo and endosperm, and the maturing of the seed. This may be done by lecture or test if material for laboratory study is not available.
- 34 3 Study of heredity. Pupils should be given some more or less detailed account of Mendel's life and work, of the so-called Mendelian laws, and of the probable process of transmission of hereditary characters. Illustrative material such as

## TOPICS

No. Number of  
Lessons

- |    |   |  |
|----|---|--|
|    |   | hybrid corn, hybrid fowls, or other available hybrids or pictures of them, may serve to illustrate the doctrine of transmission by unit characters. This material should be given in a well illustrated text, but if it is not in the text used, it can be given by lecture and illustrative material.   |
| 35 | 3 | Plant breeding. Pupils should be given some notion of the work that is being done in the way of plant improvement thru a knowledge of the laws of heredity. The breeding of disease resistant plants, drouth resistant plants, and plants of greater productivity should serve as illustrations. Practical methods of breeding seed corn and the seed of other serials should be discussed. Some mention of human heredity and eugenics might be made in the way of application.   |
| 36 | 6 | Classification of plants. Pupils should be given something of the history of classification, including the life and work of Linnaeus, the natural system of classification based on the doctrine of evolution. The characters of the four main divisions of the plant kingdom should be taught, and then the pupils should be given some experience in the tracing of plants by means of a key. This should serve as a review of the structural features of plants as well as to give the pupils some notion of the general field of taxonomy. |

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Total, 72 Lessons

From the reports received each member of the committee of three prepared a report with suggestions as to a course on one of the three subjects. These three reports with the three corresponding suggestions are here given:

## PHYSIOLOGY REPORT

Principal G. J. Koons, Township High School, Murphysboro, Illinois

As the first step toward working out a physiology course of minimum content a suggested half year course was prepared and sent to the physiology teachers in one hundred eighty-six of the larger high schools of the state. It was the intention to include in this suggested course a larger number of topics than the course of minimum content should include in order that the teachers might indicate what topics in their opinion might be omitted. It was hoped that from the replies a tentative course of minimum essentials might be prepared. With the exception of sex hygiene very few omissions were recommended. In most cases new topics were suggested. Consequently from the returns of the physiology investigation it is impossible to prepare even a tentative course of minimum essentials.

After a careful consideration of the criticisms and suggestions contained in the fifty-four replies received it was decided to rewrite the suggested course making such changes as, in the light of the suggestions received, would make it more helpful to those really in need of such outlines. It is now presented not as a course of minimum content but simply as a suggested outline for eighteen weeks' work in physiology. It is hoped that it may be of some assistance to those who are called upon to organize half year physiology courses. It is also hoped that it may be proved to be one step in the final working out of a course of minimum content by the Committee.



Several problems presented themselves in the course of the preparation of the outline. First, should the laboratory exercises be included in the outline or should a separate set be prepared? In order to get the physiology teachers' opinion on this point the question was asked on the blank sheet for tabulated criticisms sent out with the physiology outline. The following results were obtained:

See no advantage either way.....	1
No answer .....	13
Prefer with outline .....	17
Prefer separate .....	23

These results show that opinion is divided on this point and that neither side has a decisive majority favoring it. The problem should have further consideration and investigation. It is the opinion of the writer that a separate set of laboratory exercises with carefully prepared list of materials and apparatus needed will be of great assistance to inexperienced teachers.

Another problem presented was that of the arrangement of the topics. Should they be arranged in the form of outlines or in a certain number of definite lessons? This question was also submitted to the physiology teachers for their opinion. Replies were received as follows:

Condensed .....	1
Outline divided into seventy-two lessons.....	1
Answer not clear .....	2
No answer .....	16
In form of lessons .....	9
Prefer outline form .....	25

From these results it seems evident that the preference is for the arrangement in outline form.

Physiology teachers favor generally it seems the half year course. The following will show the opinion in regard to the length of the high school course:

12 weeks in general science.....	1
Non answer .....	2
Entire year .....	6
Half year .....	45

Opinion as to the place for physiology in the high school curriculum is widely different as is shown by the following:

First year .....	11
Second year .....	17
Third year .....	7
Fourth year .....	12
First or fourth years.....	1
No answer .....	6

#### OUTLINE FOR AN EIGHTEEN WEEKS' COURSE IN PHYSIOLOGY

##### *I. Introduction. One week.*

Importance of study. Brief historical account. Scope and divisions of subject. Man's place in the animal kingdom. Physiological division of labor. Relation of structure to function. Protoplasm. Cell structure and reproduction. Demonstration of cell structure and reproduction with microscope or lantern. Kinds of tissues. Demonstration of common tissues.

## *II. Foods. Two weeks.*

Necessity. Kinds. Sources of food supply. Composition and energy content of different kinds. Food charts. Simple methods of detecting adulterations. Safe methods of storing and preserving. Selection and preparation. Correct diets. Mistakes in diet. The school lunch (consult bulletin on the school lunch published by University of Missouri). Dangers in water and milk supplies. Is alcohol a food?

## *III. Digestion and Absorption. Two weeks.*

Purpose of digestion. Structure and function of organs. The teeth. Oral hygiene. Secretion and action of digestive ferments. Demonstration of the viscera of cat, rat or rabbit. Digestion and absorption in the mouth. Importance of careful mastication. Swallowing. Digestion and absorption in the stomach. Digestion and absorption in the intestines. How digested food reaches the tissues. The pupil should be able to trace in a clear and accurate manner the food from the time it enters the mouth until it is built up into the tissues. Causes of indigestion. Common diseases and disorders of the digestive organs. Intestinal parasites. Effect of alcohol on digestion and the digestive organs. How to keep the digestive organs in good working order.

## *IV. The Blood and its Circulation. Two weeks.*

Composition of the blood. Structure and function of different parts. The malarial parasite and the blood.

Structure, adaptation and function of organs of circulation. Demonstration of beef or sheep's heart. Course of the blood through the body. Demonstration of capillary circulation in frog's foot, tadpole's tail or fish's tail. Lymph and lymphatic vessels. Cause of fainting. Influence of alcohol on temperature of the body and the organs of circulation. Athletic heart. Headache remedies. So-called blood purifiers.

## *V. Respiration. One week.*

Purpose. Necessity for oxygen. Respiration in lower animals. Structure, adaptation and function of organs of respiration. Demonstration "plucks" secured from butcher shop. Breathing. Lung capacity. Exchange of gases. Internal respiration. Artificial respiration. Demonstration of methods of artificial respiration. The lungmotor. Dangers from breathing dust. Proper methods of sweeping and dusting. Necessity for ventilation. Methods of ventilation. The sleeping room. Outdoor sleeping. Drafts. Breathing exercises. Diseases of the organs of respiration. Special attention should be given to colds and tuberculosis. Preventive measures.

Structure, adaptation and function of organs of the voice.

## *VI. The Skin and the Elimination of Waste. One week.*

Functions of the skin. Structure. Hair and nails. Effect of overheated and underheated rooms on the skin. Effects of humidity. Action of clothing in retaining heat of the body. Best materials for clothing and hygienic points to be observed. Cause of fever. Chills. Chilling lowers body's resisting power. Bathing. Common skin diseases. Inflammation. Corns. Warts. Bunions. Ingrowing nails.

Structure and function of the kidneys. Effects of alcohol on them.

## *VII. Supporting Tissues. One week.*

The human skeleton. Structure, composition and growth of bones. Pupil should be able to name and identify on skeleton the important bones. Articulation.

lations. Importance of correct posture in sitting. Skeletal deformities and their causes.

Kinds and structure of muscles. Demonstration with microscopic slides of different kinds. Training and development. Exercise. Comparative value of different kinds of exercise. Simple exercises for developing and keeping body in good condition.

#### *VIII. The Nervous System. Three weeks.*

Protected position. Parts. Structure and function of different parts. Sympathetic nervous system. Reflex action. Hygiene of nervous system. Rest. Play. Sleep. Principles of habit formation. Tobacco, alcohol and drug habits. Pain, nervous disorders. Mental hygiene.

Special senses. Structure and function of the organs of the special senses. Demonstration of structure of eye with beef or hog's eye. Demonstration of structure of ear with model. Proper light for reading. Lighting of homes and school rooms. Methods of testing hearing and sight. Defects of vision and how remedied. Care of the eyes. Trachoma.

#### *IX. Accidents, Emergencies and Care of the Sick.*

The home medicine cabinet. What it should contain. Simple household remedies and their use.

Importance of a cool head and quick action in accidents and emergencies. Discussion and demonstration of what to do in cases of drowning, asphyxiation by gas, freezing, broken limbs, bleeding, poisoning, sprains and burns. Special attention should be given to what to do in case the clothing catches on fire.

Proper care of the sick. The sick room. Food for the sick.

#### *X. Home and Public Sanitation. Four weeks.*

a. Organisms that cause disease. Bacteria: classes, characteristics, reproduction, conditions favorable for growth. How they get into the body. Diseases caused by bacteria. Diseases caused by organisms other than bacteria as pyorrhea, malaria, ringworm, thrush and hookworm.

b. Hygienic and sanitary measures based on knowledge of parasites causing disease: food preservation, disinfection, vaccine and serum treatments, protection from and elimination of flies, protection from and elimination of mosquitoes.

c. Preventive measures and treatment of common diseases caused by parasites. Special attention should be given here to common communicable diseases. Bulletins on these diseases published by the State Health Department will furnish valuable material.

d. Prevention of disease by the individual. Importance of fresh air, pure food, pure water, healthful exercise and sufficient sleep. Causes of lowered resistance. Use of proper methods of dusting and sweeping. Prompt and proper treatment of cuts and wounds. Co-operation with civic authorities. *How to Live*, published by Funk and Wagnalls Company, is a good reference book for this subdivision.

e. Prevention of disease by civic authorities. Care of the streets. Care of public places. Public water supply. Sewage and drainage. Supervision of sale of milk and other foods. Quarantine regulations. Medical inspection of schools.

The subject of sex hygiene is left to the judgment of the teacher. In some places it has been prohibited by the Board of Education. In others the results are reported as unsatisfactory. In some places arrangements are made to have the subject presented by physicians,—a woman physician for the girls and a man for the boys.



References. In some cases it will be difficult to find material on the health and sanitation topics. The following are suggested as helpful reference books for these topics:

- Ritchie's Primer of Sanitation, World Book Company, Yonkers-on-Hudson, N. Y.
- Ritchie's Human Physiology, World Book Company, Yonkers-on-Hudson, N. Y.
- Rettger's Elements of Physiology and Sanitation, The A. S. Barnes Company, Chicago.
- Fisher and Fisk's How to Live, Funk and Wagnalls Co., N. Y.
- Allen's Civics and Health, D. C. Heath & Co., Chicago.
- Abridged Red Cross Textbook on First Aid, P. Blakiston's Sons Company, Philadelphia.
- Rosenau's Preventive Medicine and Hygiene, D. Appleton & Co., Chicago.
- MacNutt's Manual for Health Officers, John Wiley & Sons, N. Y.

#### ZOOLOGY REPORT

Mr. Harold B. Shinn, Carl Schurz High School, Chicago

##### *Criticism of the Suggested Course.*

Topic 1. 30 replies give complete agreement; of those which differ a minority would give more time. The criticisms vary slightly as to order and content, so that agreement seems to be fairly general.

Topic 2. 30 replies agree, 13 are silent, and a very few differ slightly.

Topic 3. 23 replies agree fully and 11 are silent. 7 would give less time. Several would omit "embryology" and "form and utility of the egg". Several would cite fewer forms for field observation. Other suggestions are minor in bearing.

Topic 4. 38 replies agree fully; 4 would give slightly more time; 3 would change the order of arrangement; other minor suggestions.

Topic 5. 33 replies agree fully; 6 would give more time, as "2 days", and 4 would change the order slightly.

Topic 6. 27 replies agree fully; 9 would give more than one day, from "two days" to "five days".

Topic 7. 23 replies agree; 16 would give less time.

Topic 8. 34 replies agree; 4 would offer minor changes.

Topic 9. 29 replies agree; 9 would allow more time, most of them stating "1 week".

Topic 10. 25 replies agree; a considerable minority would omit.

Topic 11. 31 replies agree; 8 would ask for more time. Minor suggestions are few.

Topic 12. 39 replies agree; 4 would give more time, up to 4 weeks; other minor changes are offered, chiefly, as to order.

Topics 13-15. Owing to mistake in printing the outline, replies on these topics could not be tabulated. A few suggest a change in order of arrangement should the course be offered in the second semester.

Of the various comments offered upon the course a majority speak well of it and of the attempt to determine the minimum essentials. While some assert that it is too detailed, others, of about the same number, would make it more detailed by inserting other definite topics, such as, "songs of birds", "zoology of man", "inheritance and eugenics", "civic biology", and "biography".

In view of the replies thus far obtained it would seem unwise to make the suggested minimum any greater by additions, but rather to lessen it by assigning less time to bird study and by omitting altogether topics No. 7 and

No. 10. Thus would the course more nearly suit those opposed to these studies and the time could be spent in elaboration of other topics.

In view of the emphasis placed on mammal study in the outline Mr. Shinn also gave some suggestions for the better teaching of this group of animals.

SUMMARY OF RETURNS FROM PROPOSED LIST OF TOPICS AND QUESTIONNAIRE FOR  
HALF-YEAR COURSE IN BOTANY

By J. L. Pricer, State Normal School, Normal, Ill.

Topics and Questionnaire were sent to 186 high schools, and replies were received from 52.

The schools reporting were the following:

Aledo	Jacksonville
Altamont	Kewanee
Atlanta	LaSalle
Barry	Lexington
Bushnell	Lincoln
Cairo	McComb
Carlinville	McComb Normal High
Chatham	Mattoon
Chenoa	Murphysboro
Chicago, Austin	Mt. Pulaski
Chicago, Lucy Flower	Newman
Chicago, unsigned	Oak Park
Chicago, Schurz	Ottawa
Chicago, Senn	Pawnee
Chicago, Philips	Pekin
Chicago, Tilden	Peoria
Chicago, Englewood	Plano
Chicago Heights	Pontiac
Danville	Quincy
Effingham	Randolph
El Paso	Rockford
Eureka	Rock Island
Freeport	Springfield
Granite City	Waukegan
Harvey	Wyoming
Herrin	Unsigned

Twenty-two schools reporting prefer a full year of botany. Of these, 17 would teach it in the second year of the course, 2 would teach it in the third year, and 3 did not indicate this point.

Twenty-five schools would give a half-year to the subject. Of these, 8 would teach it in the first year, 9 in the second, 7 in the third, and one did not indicate.

Two of the fifty-two schools would have a year of general biology instead of botany and zoology, and three schools did not mention this point.

Sixteen of the schools reporting would have a year of general science in the first year of the course, and two would have a half year of general science, also in the first year. The other schools either have something else than general science in the first year or did not report on the point.

Twenty-three of the teachers reporting expressed themselves as entirely satisfied with the proposed list of topics, with reference to content, order of arrangement and point of beginning. Some of these made slight changes in the number of lessons given to some of the topics.

Six teachers were satisfied with the content of the proposed course but changed the order of arrangement of the topics. This makes a total of twenty-nine out of the fifty-two who are entirely satisfied with the content of the proposed course.

Fifteen teachers offered some criticism on both content and order of arrangement.

Four teachers, all from Chicago, are entirely out of sympathy with the proposed course from almost every possible point of view. One of them writes as follows: "I find myself entirely out of sympathy with this course as regards time, content, and method." Another writes: "Let every teacher measure his time to suit himself. No teacher has a right to say how much time his equal shall devote to a given subject." Another accuses us of planning to write text books in these subjects after we find out what is wanted, and so refuses to answer our questions.

Four teachers plead unfamiliarity with the subject and had no comments to make either way. One of these said: "Latin teacher. First attempt at botany. Incompetent to criticise."

Nine teachers said that too much work was proposed for a half year. Several of these said that the outline included practically what they attempted to teach in a year course. One of the Chicago teachers said that he had been teaching botany in a three-semester course and found plenty to do in that time.

Ten teachers preferred a different order of topics and a different point of beginning. Of these, two would begin with topic thirteen in the proposed outline; five would omit the flowers and begin with fruits or seeds, topic three or four; one would begin with photosynthesis, topic nineteen; another would begin one topic back of this with a microscopic study of the leaf; and another would begin with a microscopic study of the stem, topic fourteen.

Our primary concern in this study is the matter of content. We hoped that the teachers would criticise the topics proposed, and offer other topics as substitutes. It will be recalled from the above that twenty-nine of the teachers accepted the content of the proposed course without criticism and that four said that they were incompetent to commend or condemn. This leaves us nineteen who offered criticisms on this point. I shall speak of these criticisms in the order of the topics of the outline.

Topic 1. Two teachers would study more than one flower at this point. One teacher would "cut out flowers in February", and five of those who changed the order of topics evidently did so, partly at least, because of the difficulty of obtaining flowers at the beginning of the course.

Topic 7. One teacher would "cut out delayed germination". Two others would add here, a study of weeds.

Topic 8. Two teachers would add here some seed testing and germination.

Topic 11. One teacher would add here, experiments with soil fertilizers in the laboratory. Another would study the excretion of acids by roots.

Topic 12. Four teachers would add here, some study of soils. Another would make a study of crop rotation.

Topic 15. One teacher would omit this topic.

Topic 16. One teacher would add further methods of plant propagation. Two would add practical methods of forestry, such as the conservation of forest and shade trees.

Topic 17. One teacher would add a study of modified leaves, and another fears that a study of the forms of leaves can be easily overdone.

Topic 18. One teacher would add a study of protective devices against excessive evaporation.



Topic 22. Three teachers would omit *Vaucheria* and *Oedogonium*. Two would substitute *Spirogyra* for *Oscillatoria*. One would add two lessons on the brown algae.

Topic 23. One teacher would omit microscopic study of bacteria. One would add a study of refrigeration and canning. Another would add a study of the nodules on the roots of legumes. Another would add a study of serum treatment of disease.

Topic 27. One teacher would add more plant diseases, such as apple scab and bitter rot, together with spraying and other methods of prevention. Another would add a study of lichens in relation to soil formation on rocks. Another would omit this topic altogether.

Topic 29. One teacher would add two lessons on other liverworts.

Topic 30. One teacher would omit this topic, and another would add two lessons on horse tails and club mosses.

Topic 32. One teacher would "cut out the gametophyte stuff."

Topic 35. Two teachers would have a "Luther Burbank" day.

Topic 36. Two teachers would omit the topic altogether. Two would have less classification. Two would add the classification of plants into zerophytes, hydrophytes, and mesophytes. One would have the pupils make a school herbarium. One would teach the identification of trees from a study of the leaves.

Finally, one teacher would teach the care of a lawn and the planting of shrubbery. Another would introduce home and school gardens. Another would teach hot beds and cold frames. And another would teach important industries closely connected with plant life.

#### General conclusions.

1. I believe that this study, inadequate as it is, nevertheless goes to show that those of us who still believe in teaching real botany to high school pupils and thus giving them some acquaintance with the fundamental principles of plant life together with a maximum of practical application, can come to agree fairly well on what should be the content of a half-year course in the subject.

2. The most serious obstacle in the way of standardizing our work in botany, is found in the facts that about half of the schools give a year to the subject, while the other half give one semester to it, and that about a third of the schools teach it in the first year, another third teach it in the second year, and the other third teach it in the third year. This is a matter that falls under the head of "sequence", which this committee was asked to study. Most large schools offer a year of botany and make it elective and most small schools offer a half year and make it required. It is certainly not possible to induce all schools to offer a full year of required botany. The only question left then is: —is it possible and desirable to try to induce all or most schools to offer a half year of required botany? If this question could be settled, in the affirmative, it would be a relatively simple matter to determine the year of the course in which the subject should be taught.

3. One thing is sure, and that is that the biological sciences will never come into their own as high school subjects, until some sort of order is wrought out of the present state of confusion. It seems to me that this is one problem to which this section should address itself. High school biology should be made to count as definitely as does high school Latin or high school algebra when the high school graduate takes up his work in college, and it should at the same time be made to count for a good deal more than do these other subjects when the high school graduate takes up his life work.

On motion of Mr. Shinn the Biology Section respectfully recommends that in all high schools accredited to the University of Illinois where zoology is taught the following equipment be furnished for the

teaching of mammals: the reference books recommended by the Conference, enough copies of the government bulletins dealing with wild forms for class use, one pair of horns, one skeleton of a leg or arm, two skulls of different types, and two pelts or stuffed skins.

The Committee on Sequence and Minimum Content of the Biological Sciences were directed to continue their work for another year.

A committee was authorized to consider and report at the next meeting on the minimum equipment for laboratories for the biological sciences.

Meeting adjourned.

#### CLASSICS SECTION

The Classics Section of the High School Conference met in room 202 Lincoln Hall at 9 A. M. and was called to order by the chairman, Professor H. J. Barton. In his opening address, he briefly referred to some of the more important developments in education during the past year in so far as they were of interest to teachers of the classics.

The vacancy on the executive committee of the section caused by the resignation of Mr. E. S. Lake was filled by the election of Miss Mima A. Maxey of Carlyle, Ills.; the term of office of Miss Mary E. English of Decatur, Ills., expired by limitation; Miss Harriet L. Bouldin of Springfield, Ills., was elected for a term of three years to succeed herself. The committee then organized as follows: Chairman, Miss Laura E. Woodruff, Oak Park, Ills.; secretary, Miss Harriet L. Bouldin, Springfield, Ills.

The chairman then introduced the first speaker, Miss Margaret Hubbard of Carlinville, Ills., who read a paper on "Non-essentials in the Teaching of First and Second Year Latin". Miss Hubbard spoke as follows:

#### NON-ESSENTIALS IN THE TEACHING OF FIRST AND SECOND YEAR LATIN

In a Book which nobody in good society mentions these days I have read that of making many books there is no end and I looked over my own shelves to see how many first year books were there and I found thirty-five, each one entitled Essentials of Latin or some kindred subject and I was confronted with the task of presenting you a paper on the Non-Essentials in the teaching of First and Second Year Latin. But I recalled two persons that I had heard speak in these meetings, one was a little thing about twenty-two or three all pretty complexion and soft clothes who was certainly intended for some less strenuous task than teaching Latin and who, I hope, has fulfilled by now her destiny, who rose and filled my soul with awe by talking about how her class had a feeling for the potential subjunctive; the other was a woman no less young and charming and who, I know, is fulfilling her destiny in one of the great universities of our country, who sent me home with both my hands and my mind filled with actual working material. All of us are made either for a warning or for an example. In this not-to-be-read-on-account-of-its-lack-of-science book, a

patient soul sitting in sack cloth and ashes and surrounded with humility and boils cried out, "Would that mine adversary had written a book." Again I learned wisdom and if any of the suggestions that I may make to you today have about them a familiar ring remember that mine adversaries have written many books and published many articles in *The Classical Journal* and in *The Classical Weekly* and have scattered broadcast many pamphlets and hints for Latin teachers.

Most of us are teaching first year Latin with the full knowledge that our pupils will, in the second year, read Caesar. Whether this is the best plan may be questioned by some but there are many good Latin teachers who, after trying various substitutes, still believe that the Commentaries are the wisest requirement for the second year. And could you really put your trust in a man who had not learned in his youth that Gaul was, as a whole, divided into three parts or who had not looked with curious eyes upon that wonderful river that flowed with such incredible smoothness, or who had not gone out on that misty morning with Considius and seen what he had not seen! So we are confronted in our first year's work not by a theory but by a fact, by the stubborn fact that we are preparing pupils for Caesar.

We have all lived through the horrors of the first few weeks of a class in second year Latin, and perhaps some of us were so pleasantly situated that we could lay the blame of the poor work done by our pupils upon the teacher of the first year's work but some of us have been favored with a class of our own teaching and we are sometimes astounded at the amazing stupidity of boys and girls so well trained in the first year's work, especially in some favorite rule or some well loved construction. Who of us can forget that awful little girl with the big blue eyes and the ingratiating smile who after she had been thoroughly trained to say, "Many verbs meaning to believe, favor, help, please, trust and their contraries also to command, obey, pardon, persuade, resist, serve and spare, take the dative" dared ask us why Castico was in the dative case when Orgetorix went out on that third page to persuade him to join the Helvetian conspiracy, or who does not still know that little self-starving weeper that Dr. Johnston, of honored memory, told about who knew that moribus was an ablative and so translated it but when asked what sort of an ablative it was could not tell. But when Dr. Johnston himself looked it up in four different sets of notes he found four different sorts of ablatives named.

When part, at least, went to school going to school was the chief occupation of our lives but have you ever stopped to consider the burdens that are laid upon the shoulders of some of these poor little world weary things that come into our class rooms? I sometimes wish that I still lived in those high and far off times when boys and girls were boys and girls, before the days of literary societies, of glee clubs and of amateur mechanics clubs, and of classes in public speaking, household science, music, art, before the days of annuals and of school papers, before the formation of societies in the interest of the drama, and of science, mathematics, history, before foot-ball and basket-ball had come into their own, before the days when even the fathers and mothers were compelled to spend every evening at the moving picture shows or playing bridge and could devote a part, at least, of their evenings to encouraging their children to prepare their next day's lessons. Truly the present times are not what they were but they are what we have and whether or not we approve matters little but whether we are preparing our pupils to read Caesar matters much, and the problem set before us is to be dismissed by none of the complaints brought forward. The course is the one offered, the work below our own or even our own may have been faulty, our pupils may be dull or lazy or overworked or fine yet they are what we have to work with even if they cannot tell a gerund from a gerundive and if they are not ready for their second year's work is the fault wholly theirs?

The question to be decided these days is not how much must we teach but how little may we teach and still give the poor little sophomore a sufficiently



well equipped mental sarcina when he begins his perilous march to the wars in Gaul. In attempting to answer this question I am merely trying to find one of the roads that leads to the Rome of our desires, a first year class well prepared to read Caesar. Dr. Johnston once said that he had learned long ago that the golden rule of all good teaching was "Never do today what can be postponed till tomorrow." There is a feeling abroad in the land that we must reduce the amount of Latin in the first year, that we must omit the non-essentials. In some high schools the Latin departments issue pamphlets to the pupils. In these is stated the exact requirements in conjugation, declension, syntax, etc., for each semester, and many constructions formerly favored in the first year are left for the second. What are the non-essentials of first year Latin? The more specific may be grouped under the following heads: (1) non-essentials of vocabulary; (2) non-essentials of pronunciation; (3) irregular or alternative forms and forms rarely found in Caesar; (4) forms, which common in Caesar, are best dealt with there; (5) non-essentials of syntax.

First:—That our pupils must have a Latin vocabulary at the beginning of their second year we all admit but only such words as are common to Caesar's Commentaries should be attempted and only as many of those as can be thoroughly mastered. More than these are worse than unnecessary, for while a large vocabulary at the beginning of the second year is greatly to be desired a half mastered vocabulary that results only in confusion is a source of great difficulty. It is no easy task for a pupil to acquire from five hundred to a thousand words in from eight to ten months especially if he try to memorize all the forms and syntax in connection with them. It is better to have a smaller vocabulary with forms and syntax well mastered. No matter how many word lists you may give your pupil you will find at the end of the year that he has made his own vocabulary and can recognize and translate at sight the words that he has found really useful. Oh, this present day American youth is an economist! It behooves us then to teach him the value of Latin and since he takes no thought for the morrow in learning his lessons it is well to drive home as many words as possible, especially those that he will use in the second year, by analyzing such English words as malefactor, benefactor, bellicose, belligerents, allies, malediction, valedictory, optimist, pessimist, etc.

Second:—Concerning pronunciation there will be a wide divergence of opinion. Professor D'Ooge says in one of his Teachers' Manuals, "Pupils have sometimes been required to mark all the long quantities in their written work. This, in my judgment, is a mistake, especially in the first year, when so many vital matters of far more relative importance are demanding attention. For the beginner the quantity of the penult and the ultima are of more importance than the quantity of the other syllables, the former because it determines the word accent, the latter because it often differentiates one from another." Dr. Johnston says, "the average teacher of beginning Latin nowadays is drilling his pupil in pronunciation, that is, is training his tongue and ear, as carefully, as is the teacher of German on the floor above, but he has no such reason for his toil. The average pupil in his class will never pronounce a Latin sentence or hear one pronounced outside the class room, no matter how long his life may be spared to him." He continues, "You might almost as well train him to read raised letters with his fingers, or teach him to write his name with his toes, 'least' he may one day be an armless wonder in one of Gentry's sideshows. Pronounce the Latin clearly yourself, as you think it ought to be pronounced, see that your pupils get the right sound of the letters, carefully distinguishing the quality of the vowels, teach them to put the accent where it belongs; then if you can understand the forms they have in mind when they recite the paradigms to you orally, and if they can understand the Latin words you have to use in your questions and corrections, you may feel sure that you have done enough for the training of the ear and tongue. Leave all beyond this to those who are to make philologists and phonetists out of your babes; your responsibility does not reach so far." If you are wise, you will confine yourself to marking the stem vowels in verbs and the long vowels in case endings.

Third:—With respect to irregular and alternative forms and forms rarely found in Caesar little need be said. The dative and ablative plurals of *dea*, *filia*, and *lacus* may be easily avoided and as easily explained when the time so demands; as may be the *-re* of the second person singular passive and the *-ere* of the third plural perfect; the alternatives of the demonstrative *is*, and all similar forms, may be passed over with one careful reading. In the Oak Park outline of work to be covered for the Latin I finals the following suggestions are made based on Professor D'Ooge's *Latin for Beginners*:—Memorize all the forms of the five declensions omitting the nouns *deus*, *domus*, and *vis*; memorize declensions and comparisons of regular adjective of the first and second and of the third, observing the irregular forms, *bonus*, *malus*, *magnus*, *multus*, *parvus*, but leaving for the second year the comparison of the irregular adjectives *senex*, *juvenis*, *vetus*, *exterus*, *inferus*, *posterus*, *superus*, *citerior*, *ulterior*, *prior*, *propior*, which are included in the great majority of first year books and which are not essential to the first year. Also under this head, if we honestly wish to prepare for Caesar we must be willing to give up many long honored features of first year work. Omit all the following:—The vocative case, used once in the first four books of Caesar, except a mere mention of masculine nouns of the second declension ending in *us*; the locative, used five times in the first four books, except *domi* and *Romae*; neuters of the fourth declension, except *cornu*; all fifth declension nouns except *dies* and *res*; noun stems except in the third declension; personal pronouns of the first and second persons; adjective pronouns, except *noster* and *suus*, and these should be called adjectives; also omit all numerals, except the cardinals one to ten inclusive, and *mille* and the ordinals from first through tenth; the demonstrative *iste* and all indefinites; leave out also from the first year's work the irregular verbs *fero*, *eo*, *fio*, and *prosum*, and from the regular verbs all imperatives, except the present active, all gerunds, gerundives, and supines; all defective and impersonal verbs and all mention of dates. The reasons for all these omissions are perfectly evident.

Fourth:—Even after all this has been omitted there remain many constructions which can be more effectively taught as they arise in the course of the work in Caesar. They are not the same sort of non-essentials as those mentioned above, but they are as truly non-essentials of first year work. For instance the ablative absolute which appears at the very beginning of our work in the *Commentaries* is more easily explained and more effectively taught when it appears in connected discourse than in detached sentences while gerunds and gerundives and periphrastics appear so frequently in Caesar that they soon take on a familiar look and come to be welcomed as old friends. The ablatives of comparison and of degree of difference; substantive clauses of result and subordinate clauses of indirect discourse; the dative with compounds and the ablative with the five deponents may all be left for the second year.

Fifth:—I should like to discuss non-essentials in syntax under two heads: noun syntax and verb syntax. First:—Noun syntax. Our teaching of declension is often faulty. No pupil should ever hear the word declension till he has been made familiar with each case. After he has been led by careful drill in numberless simple examples to understand the nominative as subject and attribute, the genitive as possessor, the accusative as direct object and as following *ad*, *in*, *per*, and *trans*, the dative of the indirect object, and the ablative following *ab*, *de*, *ex*, *in*, he may be presented to formal declension. A vocabulary of serviceable words for this drill may be easily acquired. In Mr. Byrne's little book he presents the needs of Caesar. For instance he tells us that the nominative is used one thousand three hundred sixty-four times in the first four books of the *Commentaries*; that the possessive genitive is used seven hundred nine times; that the accusative as direct object is used twelve hundred sixty-four times; the dative as indirect object, one hundred eight times. He subjects each case to the same analysis and a study of this analysis will give us a hint, at least, of numerous non-essentials. No matter what text we use we shall all probably agree that there should be excluded from the first year's work the follow-

ing constructions: the genitives of material, value and description and all genitives with verbs; the datives of possession, agent and reference; adverbial and cognate accusatives, the accusative of exclamation, and two accusatives with verbs of asking, demanding, teaching, inquiring, etc.; the ablatives of price, and of degree of difference and with comparatives. The partitive genitive and the genitive of possession may be taught in the first year as may also be taught the indirect object and the dative with the adjectives and with certain intransitive verbs; the accusative as subject of an infinitive and as direct object, as expressing duration and extent and place to which, and the accusative with the prepositions *per* and *trans*; the following ablatives, accompaniment, agent, cause, means, place from which, place where, time and manner. Let us keep carefully in mind that what is taught matters not when compared with the way in which it is taught.

Second:—Verb syntax. Care should be taken that we do not try to teach too much. The use of the indicative in the simple relative clauses and in independent sentences may be taught. Dependent subjunctives should be handled with care in the first year. If dependent subjunctives are to be taught at all in the first year let them be limited to clauses of purpose, substantive clauses of purpose, result clauses, to *cum* temporal and to causal and concessive clauses with *cum*. Under the infinitive the complementary and infinitives in indirect discourse may be taught. Participles except as to their formation and use in the different compound tenses are too difficult for young students. But the little syntax that is really necessary can hardly be too thoroughly taught. Each new construction should be worked out carefully before the class. Present examples of the simplest sentences that will illustrate the new principle and do not leave it until it has been grasped by even the dullest pupil in your class. Then watch carefully the pupil's translation of the English sentences into Latin, this is where the syntax should be taught, but do not worry him about syntax when he translates Latin in English, if he can make a correct translation. Do not let him write out his translation of Latin into English, he must be trained to read from the printed page before Caesar and he start on their long marches through Gaul else how can he ever keep pace with that mightiest general of all.

Just a word about non-essentials in Caesar. In his syntax of High School Latin Mr. Lee Byrne says: "Vocabulary and forms and syntax hold a place in classical instruction only as a means and the end is a power to read the language. Syntax should not be exalted unconsciously or uncritically to the first place, and Latin literature treated merely as a means with which to build up a complete system of grammar. The great aim, the reading of Latin, should be kept clearly in mind. It is incumbent upon us to determine what portions of syntax actually contribute to the reading that we are doing, and which contribute the most. The domain of syntax is so large that its exclusive study might easily occupy the whole high school period. The time and energy of students should be carefully guarded, and only such matters admitted from the field of syntax, or of linguistics in general, as do surely and largely contribute to the securing of a reading knowledge." The subjunctive in independent statements, the potential, optative, and hortatory should be left for the third year because they are not used by Caesar. Let the prose sentences illustrate the syntax that the pupils deal with daily. Do not make them wrestle with the intricacies of indirect discourse involving conditional sentences. Leave conditional sentences till the very end of the second year or better to the first part of the third. Decide what portions of the text you will read in a semester. Miss Sabin's Hand Book for Latin Teachers will be helpful to you in this matter. Check constructions used frequently, and have short prose sentences to illustrate them. A writer in the *Classical Weekly* says: "Most of us have torn our hair over the English-Latin sentences that our pupils give us. It is no such serious matter. The exercises provided are often too difficult. Our pupils will never write anything that Caesar would recognize as Latin prose. The value of such work is



only in fixing form and construction. Fret not yourself over incorrect order, nor agonize if a boy cannot write accurately a future less vivid condition upon which have been ingeniously grafted indirect statement, the genitive of the whole, three ablatives, a declinable numeral, the neuter comparative of an adjective, and the superlative of an irregular adverb."

The point that I am trying to make in all this is that we cannot, as our schools are at present organized, teach the average beginner all that he will need for Caesar in the way of form and syntax, just as we can teach him only a partial Caesar vocabulary. At the first sign of indefiniteness it is the part of wisdom to stop and review forms and syntax and fix them by means of numerous examples. On taking up a new construction twenty or twenty-five sentences of the simplest form but illustrating the construction under discussion will be found more helpful than time spent on unnecessary constructions. Depend upon repetition for permanency. If necessary omit some of the sentences in the book and give many simpler ones. Spend the time thus gained in teaching your pupils to read Caesar understandingly. From time to time short exercises in connected discourse and bits of Latin picked up from the daily papers or magazines should be introduced for then for the first time the pupil feels that he is really reading Latin. In the Literary Digest I came across a paraphrase of the second chapter of the first book of Caesar's Gallic War done in Latin by an alert Valpariso student, beginning, *Apud Mexicanos longe dirtissimus et orneryissimus est Villa*. This gave my second year class much joy. And if you are a faithful reader of *The Line o' Type*, you will find that B. L. T. will furnish you some Latin that even your beginners will translate eagerly with some help from you. For the beginners there are also a number of fables and Mother Goose melodies that are fine for loosening the tension. Miss Susan Paxson's *Hand Book for Latin Clubs*, published by D. C. Heath, is, in part at least, within the grasp of your first year people. This year I have tried greeting my first year class with some short Latin phrase and dismissing it in the same way. Sometimes I say to them when they come in, "What is it I say to you?" and hands spring up as quickly as did Memnor's soldiers, and after a poor lesson there is always a look of disappointment, if I simply say, "You are excused." I also prepare short conversations for the last minute or two of the recitation period very easy in every way but care is taken to impress certain forms and I find them most interested in this sort of work. Often I put in an unexpected word and the boy or girl who grasps it first acquires much glory among his fellows.

No matter what text is used such changes as have been suggested will entail an enormous amount of labor upon the teacher. Work must be carefully planned, parts of lessons and sometimes whole lessons must be omitted from the text, much supplementary work must be prepared by the teacher and placed in the hands of the pupils, but in the end the labor will pay. And now in conclusion I beg that some of you will write a book and call it not *Essentials of First Year Latin* but *Non-Essentials in the Teaching of First and Second Year Latin*.

In the discussion that followed, questions were raised concerning the marking of long vowels, pronunciation, the study of English derivatives, amount of syntax to be emphasized, method of translation of sentences in case such forms as indefinite pronouns were omitted in the work of the first year.

The second number on the program was "The Springfield Laboratory—Recitation Method of Teaching Latin," by Miss Ethel J. Luke of Springfield, Ills. Miss Luke spoke as follows:

Of the innumerable questions raised for many years in connection with teaching in high schools, none have been more insistent, more earnest and more perplexing than these,—“How may we eliminate the enormous waste in time, effort and money which is glaringly apparent in simultaneous recitations where the best pupils are idle and bored a great part of the time, while the poorest are dragged along over the ground bewildered and unhappy?” Is it justice to the bright pupils to devote the most of the recitation period to the medium and poor pupils?”

While elaborate tests have been made to determine accurately individual differences in capacity and some have tried reverting to the old method of individual instruction, this has been proved to be impractical without a greatly enlarged teaching force.

While supervised study was one important step toward the solution of these problems in the Springfield High School, our Principal, Mr. I. M. Allen, was not satisfied. His years of thought and experience in dealing with these problems finally resulted in his working out, in collaboration with Mr. H. O. Barnes, of a laboratory plan of conducting work in Algebra. Mr. Barnes labored with great intelligence and patience during all of last year to perfect the details of Mr. Allen's plan, which was absolutely new and involved many difficulties. While both Mr. Allen and Mr. Barnes felt that the method as tried in Algebra for one year was not wholly successful because there was no provision for *class recitation*, they still felt that the experiment had been most valuable and should not be abandoned.

So enthusiastic was Mr. Allen as to the possibilities of the laboratory plan that he felt justified in submitting and recommending it to several other departments, with one very important addition, that of combining recitation with the laboratory plan.

The laboratory-recitation method, as at first outlined, included

1. The assignment, followed by individual study.
2. Testing of pupils by laboratory teacher.
3. The application, that is, working out by pupils of problems or exercises based upon principles previously studied.
4. Recitation, in groups, to recitation teacher, always on ground previously covered in the laboratory.

In June, 1916, the English, History, Mathematics, Latin, and Biology departments voted to adopt Mr. Allen's scheme, to be known as the Springfield-Laboratory-Recitation method. Accordingly the work was at once apportioned among the teachers of these departments and, during the hottest summer on record, lessons for two years work in English, two years in Latin, all the History, all the mathematics and Biology were definitely assigned, outlined, and printed in manual form and on application cards.

Now, in order to make clear all that will follow, it is necessary to describe in detail the mechanics of the plan.

1. Periods in all departments of school to be double. (85 minutes with us.)
2. Class-rooms of each department to be adjacent; laboratory teacher and recitation teacher in any given class to be in connecting rooms.
3. Laboratory to be equipped with sufficient desks for teacher and assistants, cabinets for filing application cards and books kept by clerk in which record of each pupil's advancement may be seen at a glance.
4. Assistants to be selected and trained by teachers of the department.
5. Manuals to contain definite assignments for whole year's work, divided into lessons for convenience.
6. Application cards (sufficient for each pupil in laboratory at any one time.) These cards, in the Latin department, to contain sentences

to be written in Latin based upon definite portions of text, illustrating definite principles of syntax. These cards are numbered to correspond with manual lessons.

7. Pupils of any given class to be divided by recitation teacher, according to ability, into three groups, A, B, and C (or A and B, in small classes.) Length of recitation for each group and number of recitations per week to be determined by recitation teacher after consultation with the Principal and laboratory teacher.
8. Groups to be flexible.

Since the Springfield-Laboratory-Recitation method is so new and still in the experimental stage, it has seemed best to secure, by means of a questionnaire, expressions of opinion from all the teachers working out the plan, viewing the subject from many angles.

The first question as to *defects in the old system* which doubtless suggested the new plan to Mr. Allen, elicited the following replies which I shall give in brief outline form. There will be some repetition, of necessity:—

1. Having pupils of all grades of intelligence and ability in one class.
2. The old system compels uniform presentation of subject matter to students of varying ability to grasp and assimilate it. It demands that all move at the same rate of speed which kills the enthusiasm of the good student and bewilders the poor student.
3. Holding slow pupil to higher standard than he can attain.
4. Holding fast pupil to lower standard than his ability demands.
5. Lack of provision for pupils who have been absent to make up work.
6. Lack of opportunity for pupils to make progress according to ability and industry.
7. Lack of definite check on pupils who are irregular in their work.
8. Classes over crowded with pupils not able to do the work, yet insisting upon taking the subject.
9. Hard feeling on part of pupils failing at end of term—failure often determined by one long examination.
10. Habit of missing assignments because of absence.
11. Question of lowering the level of teaching to comprehension of slower pupils.

In reply to the question, "What are the most obvious *advantages* of the laboratory-recitation method as observed during a trial of two months?" forty-nine replies furnished much food for thought. The following condensation presents the most important advantages of the method:—

1. Definite time and definite place to study.
2. The system is more efficient in that, under the old system, *general* help had to be given entire class instead of specific help to individual's difficulty.
3. Teaching adapted to ability of groups.
4. System makes for individuality and independence in that pupil is responsible for his own standing in class and is forced to work independently of the other fellow.
5. Initiative and independence encouraged.
6. Work more definite.
7. Capacity of pupil measures his advancement.
8. Pupil who cannot do the maximum may do the minimum and receive credit accordingly.
9. Putting responsibility for progress more directly on pupil.
10. Pupils absent can take up work where they left off—easier than making up work under old system.
11. No question as to having student when needed to go over work with him.



12. Explanations can be given at time they are most needed and so best heeded.
13. Each pupil has the advantage of different methods of two teachers.
14. Readily detects loafing on the part of the pupil.
15. Pupils cannot bluff through in the crowd.
16. Premium placed on industry.
17. The pupils work harder and with more interest, for they can measure their progress.
18. Pupil sees just how much work he is really doing, or capable of doing.
19. Pupils forced to recognize their own limitations and eliminate themselves, if they are helpless.
20. Impossible for pupil to waste as much time as under the old system. With the same amount of energy he can accomplish much more than formerly because his efforts are directed.
21. The new method furnishes an incentive to pupil who formerly loafed.
22. Every pupil gets a square deal and must acknowledge it.
23. Superior pupils kept busy. Assignments for whole year are definitely made and in pupil's hands.
24. Fast pupils can do more extensive work.
25. Poor pupils are not discouraged by being in daily and direct contrast with best pupils.
26. Poor pupils, by working more slowly with more guidance, carry the work instead of flunking.
27. The new method prevents omission of any assignments, as was inevitable in case of prolonged absence under the old system. It also checks tendency to prepare carelessly just for a day.
28. The method eliminates cheating, practically, also necessity for discipline.
29. Parents can actually compare their child's progress with that of other children. It is all down in black and white.
30. For the first time in our experience *there will be no* failures in beginning Latin. Of course there will be a small retarded group which may require a year and a half in which to complete the required work, but they will have been spared the humiliation and the stigma attaching to failure in the freshman year. In case of pupils who have not completed the required work at the end of any period when grades are given, their grade is marked "W" (withheld).
31. Reference books needed are in laboratory, always available.
32. Accuracy in writing, especially noticeable in beginning Latin.
33. *Fresh material* for class reading made possible in beginning Latin—the exercises in "D'Oge."
34. The new method *unifies* work of department because teachers come into much closer contact than has ever been possible before. There is valuable interchange of ideas and methods.
35. Pupils are for the most part *happy* in their work.
36. The comments of visitors have been encouraging. They comment upon *quiet atmosphere of work* everybody interested and occupied.

In answer to the question, "What other advantages may appear in time, under better conditions?" several interesting replies were received:—

1. The development of a keen competition and wholesome rivalry.
2. A more systematic method of working.
3. Improvement in habits of study.
4. Extra credit could be given for doing more than the required amount of work.
5. If classes were not too large, there would be opportunity for the teacher to study the student and discover the source of his success or his failure; he could check growing habits that are bad before it is too late to help.

6. When the system has been thoroughly tried and adapted, when the mechanics of the system have been simplified and mastered, there will be an opportunity for the development of individual talent.
7. Under ideal conditions provision might be made for testing of the *mental age* of all freshmen and placing of subnormal under teachers whose business it would be to do it. *None of us can do it.*
8. The slowest group, or trailers, will be given the quality and quantity best suited to them. In some instances incapacity for the work will necessitate dropping of subject when pupil is convinced that he is not capable of carrying the work.
9. Under this method the development of a system of cadet teachers will be possible.

In answering another question, "Do you think the plan is better adapted to any one department rather than others?" with one accord the teachers of Algebra, Science and Latin claim that the method has peculiar advantages for their special departments.

1. Some think it is most effective in mathematics and science where the *problem idea* is present; subjects where work is either right or wrong rather than those for which there are varying degrees of accuracy.
2. One thinks the method is more easily adapted to Algebra than Geometry.
3. English teachers agree that the plan works better in composition than in literature, while the head of the English department thinks the system gives a fair chance to the two aims in teaching literature.
4. Most teachers think the method can be *adapted* to the different departments. Mr. Allen that it can be applied to all academic work equally well.

As to the *disadvantages* of the method, it is significant that a very much smaller number are given than of advantages while the consensus of opinion is that most of these disadvantages will disappear as the technique of the method is mastered. None of the disadvantages pointed out have been suppressed.

1. First few weeks were necessarily spent in *learning how* and time was wasted.
2. Too much time spent in handling the mechanics of the system.
3. Hard to keep an efficient check of each pupil, especially in large laboratory sections in English and mathematics.
4. Teacher has so many pupils he has to put too much time on mechanics rather than on teaching. Student help does not solve this satisfactorily.
5. Groups are shifted too often.
6. Loss of time in laboratory.
7. Too many individual pupils.
8. Classes too large which means that more teachers are required to do the same work than under the old system.
9. Teachers are overworked, especially in English department where classes are large, much written work is required and competent student help is hard to obtain.
10. Long teaching hours are particularly tiresome. No time during school hours when teachers may prepare lesson plans.
11. Teacher has not enough time for her own work. If classes recite in three groups, there is not enough time for recreation.
12. Too little time for class discussion in short periods.
13. Too much must be left to inexperienced helpers (in English and History).
14. Not enough time to do individual work in a large laboratory section.
15. In application work emphasis was at first laid on quantity rather than quality. Pupils seemed consumed with a wild desire to secure ap-

plication cards from the clerk, that is, before they discovered that a thorough knowledge of the work outlined in the manual was absolutely necessary before presenting themselves to the laboratory teacher to be tested.

16. Recitation and laboratory teachers may differ as to the operation of the system.
17. The plan is all for the bright student and the slow pupil's slowness is glaringly shown up, with no opportunity given the teacher to devote the necessary time to him in the laboratory. (True in very large classes.)
18. Slow pupils go apparently even more slowly than under the old plan.
19. The system fails to give poor students the stimulation required from good students in general class-room exercises.
20. Unless the teacher is careful, too much of the inspirational side of the subject will be sacrificed for the mechanical.
21. Pupils miss the inspiration of the assignment. Lack of freshness and spontaneity in recitation after subject has been under consideration so long in laboratory.
22. Enthusiasm in literature recitations is lacking.

In answer to the question, "Do you regard the disadvantages of the method as fundamental, or do you think they will disappear with experience?" practically all of the teachers are of the opinion that they will gradually disappear, provided the teaching force is enlarged. One teacher thinks poor students losing stimulation acquired from contact in recitation with best students is fundamental, unless a general convocation period for each class can be arranged. While practically all teachers who have been working out this laboratory-recitation plan for ten weeks are deeply interested in it and have said emphatically that it is well worth while, all agree that it presents problems of great difficulty. Of the problems waiting to be solved are

1. How to reduce excess of machinery in operating the system.
2. How to eliminate or lessen confusion in large laboratory.
3. How to adjust added demands on teacher.
4. Securing sufficient and competent aid for instructors.
5. How much testing should there be in laboratory? Danger of testing in laboratory over-lapping work of recitation teacher.
6. Seeing that every pupil is working on right topics to best advantages.
7. Keeping material available until the pupils of all sections have had a chance to work with it. (Science.)
8. Problem of equitably ranking pupils.
9. How to lengthen recitation period.
10. Bad adjustment between laboratory and recitation (in English).
11. Cooperation of laboratory and recitation teachers.
12. How to keep recitation in proper relation to preparation made by pupil.
13. Problem of the slow pupil who cannot grasp meaning of text; the student without initiative and with little ability.

The problems of the slow pupil stands out so prominently, Mr. Allen feels certain that we shall learn better than ever before what to do with this group. Special courses and specially trained teachers are needed for this group and we feel hopeful of securing them in the not distant future.

This paper aroused much discussion into which were drawn the Latin teachers from Springfield and Mr. Allen, the principal of the Springfield High School, who was responsible for the introduction of the method. Questions were raised concerning the material used both in the laboratory and in the recitation, the manner of conducting the



work, grading of results, schools, and the time spent in handling the mechanics of the plan.

The third number was a report submitted by a committee appointed to consider the subject of Fourth Year Latin. This committee consisted of Miss Jessie I. Lummis, Normal, chairman, Mr. James C. Dolley, Lebanon, and Miss Mima A. Maxey, Carlyle. The report was read by the chairman, Miss Lummis.

#### Fourth Year Latin in the High School.

The committee appointed to discuss the work of the fourth year in Latin in the high school has arranged its report under the following heads:

- I. The first six books of the Aeneid—the chief reading of the fourth year.
- II. The generally accepted issues in the work of the fourth year.
  1. Good English translations.
  2. Vocabulary drill, work in etymology, etc.
  3. Syntax.
  4. Scansion.
  5. Sight translation.
  6. Prose composition.
- III. Often neglected issues in the fourth year.
  1. The geography of the Aeneid.
  2. The mythology of the Aeneid.
  3. The technique of the Aeneid.
  4. Some supplementary topical studies in connection with the Aeneid e. g.
    - a. Vergil's similes compared with those of Homer.
    - b. Vergil's influence upon English authors.
    - c. Vergil's life.
    - d. The story of the last six books of the Aeneid.
    - e. The Eclogues and the Georgics.
    - f. The Augustan Age.
    - g. Other great epics.

I. The minimum amount of reading to be done in the fourth year has been virtually settled by the requirement for college entrance of the first six books of the Aeneid or the equivalent of this. Investigations show that a great many teachers confine the work to the first half of the great Roman epic and with this in mind the topics discussed in the remainder of the paper were selected.

A word however in regard to other possible reading material for the fourth year may not be out of place. The Greek and Roman myths as Ovid tells them are so interesting and the study of them lays such a splendid foundation for the appreciation of the Aeneid that it is a matter of regret to many not to find a course in Ovid in the curriculum of every high school. Would it not be better, if the time element is the deciding factor, to have the third or fifth book of the Aeneid or both read without intensive study on the translation and to have the Ovid? Surely the plan is worth trying for the student is brought into contact with another great poet of the Augustan age and his vision thereby broadened and his understanding of Roman literature deepened.

II. Under the heading "Regular issues in the work of the fourth year" have been grouped those points to which more or less emphasis is given by nearly every teacher.

1. Ability to translate the Latin text into idiomatic English is the goal toward which the student directs his energies chiefly. Too much stress cannot

be put upon good, terse, idiomatic English. We Latin teachers are prone to forget at times that the Vergil class is also an English class. Literal translations should never be permitted except in the case of a chance phrase or clause where the meaning of construction can best be made clear by that method. English is our mother tongue and it asks always that we put forth our best efforts in its behalf. The toleration of slipshod English in any class is unpardonable.

2. The results of Mr. Lodge's investigations in vocabulary have furnished a new incentive to the Vergil teacher along that line. The word study begun in the first year and continued thru Caesar and Cicero seems to many quite as necessary in the fourth year. A plan that has found favor in a number of schools recently is to give out each day mimeographed lists of words prepared with the assistance of the Lodge vocabulary. A three to five minute oral drill at the beginning of each recitation helps to fix the words in mind. The results obtained thus far have seemed exceedingly gratifying.

Aside from the attempt merely to increase the number of words that the student has at his command Vergil offers an interesting field for work in etymology, phraseology, etc. There are unbounded opportunities to enliven this part of the work.

3. A study of syntax per se seems on the whole rather out of place in the fourth year. It should be a tool, sharpened occasionally to keep it in order. Naturally, however, considerable attention must be given to constructions that are met with for the first time; to those in Latin poetry that are different from those in prose. When these have been mastered only such attention as is absolutely necessary should be bestowed upon syntax. The teacher has an opportunity in going over the lesson for the next day to anticipate the real difficulties and this is a useful exercise that is full of interest to the student, always, for obvious reasons.

4. From the suggestions of a number of teachers in regard to scansion and the reading of the Latin two plans have been selected and are offered here.

a. The class is started on scansion at once. The form of the verse is carefully studied until clearly understood and then written work is brought to class each day. This is corrected and disposed of in about five minutes and the remaining time is free for vocabulary drill and sight reading. When the pupils can scan an ordinary line without error, the scansion is dropped and translation only is assigned until the initial struggle with that is over. Oral scansion, however, is continued along with translation thru Book I. In the latter half of the book, pupils mark the caesurae and diataxas. At this point the rhythmical reading of Latin verse is introduced and practiced until each pupil attains reasonable ease and fluency. After Book I. only enough reading and scanning are given to make sure that the principles are remembered.

b. Elision is carefully explained to the pupils and then the reading of the Latin is carried on without restraint or other formal regulations. The Latin is always read—all of it—in class each day and the pupils gradually acquire, some quickly, some slowly, a feeling for the rhythm. When the first book is finished the principles of the meter are taken up and carefully studied. Technicalities of prosody are explained as they occur. Written work is handed in or there are exercises at the board until a line can be accurately marked. The reading of the Latin is kept up all thru the year and an attempt is made to read with understanding and expression, to read the poetry, in other words, as naturally as one would prose. If the teacher reads well himself, i. e., accurately and with spirit and grace he will be a great inspiration to his students.

5. Sight translation at the beginning of the Aeneid seems to be in favor with many teachers, with words lists and the memorizing of the first lines of the poem and scansion also, if the principles of that be taken up immediately, assigned for outside study. Sight reading appears to be done to advantage too in Book III and V, especially in the latter. Too much stress cannot be put

upon this phase of the work for in this way the pupil is shown how to study, how to use his working materials. The Latin should be read by the student, reread by the teacher, read again by the student if necessary before the English is attempted. Only thru entire familiarity with the Latin and constant reading of it does the feeling for the meaning really come, does one ever reach that goal to which all should aspire, that of reading the text understandingly without translating at all.

6. Is it unthinkable to omit Latin prose altogether while reading Vergil? A prose lesson in itself may by no means be dull and uninteresting but does it not seem rather discouraging to the student to turn abruptly from the musical and stately rhythm and dignified expression of one of the world's greatest poets to his own halting, disjointed, troubled Latin? If, however, one approves or feels the need of prose along with Vergil the following plan may prove suggestive; the prose is given while Book V is being read at sight; time in class may be taken for the presentation of the principles in the new assignment and the reading part of the recitation hour used for sight reading. The papers may be corrected and discussed at conference periods or, if this is not feasible, some of the recitation time may be used and the amount of sight work done somewhat diminished. Method in teaching prose has been discussed at our previous meetings and need not be repeated here.

III. The line of thought suggested by the next main heading "Often neglected issues in the fourth year" is broad. Much of the work may come in so naturally that one scarcely realizes that what he is taking up is a special division of the subject but on the other hand, many interesting and important points will pass unnoticed if care is not exercised.

1. Surely never in recent times has there been a better opportunity for a study of the setting of the Aeneid than at present. Places that seemed very remote and deserted have all at once become near and very much alive as the scenes of recent warfare. The old story of the Siege of Troy has been referred to again and again in the editorials of our newspapers and the discussions of that ancient campaign of the Greeks have taken on new life. Many stories of the historic Aegean shores have been revived. Operations at the Dardanelles brought to mind again the tale of Hero and Leander and of Lord Byron's repetition of Leander's swimming feat. The story of the disappearance of the Greek fleet around Tenedos and its sudden and unexpected reappearance had its counterpart, not long since, so we are told, in an incident connected with some British boats in that locality. The newspapers and magazines have been full of maps and plans of the Aegean countries and descriptions of their physical characteristics and of the modern places. There is a wealth of current material. To mention an example, the article entitled "Historic Islands and Shores of the Aegean" in the National Geographic magazine for October, 1915, is one of the best that has appeared in the last year. A bulletin board proves exceedingly useful where interesting material that is found or prepared by the student or teacher may be put up for careful examination and left until all are familiar with it.

Each pupil should prepare a map (filling in an outline map preferably) of the Mediterranean countries showing the route of Aeneas and the places he visited. With the knowledge of the location of the places gained in this way, a careful study should be made of the districts and places today, their physical features looked up and their people and life there described. All this will bring the journey of Aeneas home to the reader and may arouse an interest in places and peoples that will become a dominating influence in the pupil's life. A plan that usually arouses interest is to have cards with the name of a place on each handed out to the pupils after definite instructions have been given as to the manner of procedure. The pupil gathers together all the interesting data that he can secure in regard to the place, arranges it in the best shape possible on the card, gives his oral report in class and then files his signed card away for future reference in a box planned for the



purpose. Cards may be changed as better reports are received from year to year or the number of cards may be greatly increased as the scope of the work widens.

2. If the class has had a course in Ovid the presentation of the mythology of the Aeneid is greatly simplified. The Greek and Roman myths and their origin and character have been studied and this study cannot but make for a vastly better understanding of Vergil's use of mythology.

If such a course has not been given the pupil must be ready to adopt at once as his "Fidus Achates" Gayley's *Classic Myths* or Bulfinche's *Age of Fable*. There should be an intensive study of each god or goddess as new divinities appear in the story. The references in mythologies should be looked up and then the text closely watched for various characteristics to be brought out. The different representations of the deities that we have should be studied from photographs, prints, slides, or plaster casts and the most characteristic and best features of the works of art noted. These photographs should be where they can be seen day after day, until the students are thoroughly familiar with them. Many girls and boys receive their first incentive to acquire an appreciation and understanding of the best in sculpture in the Latin classes.

The chief stories or legends to which Vergil refers should be known and the interpretation of some of them; at least of a sufficient number to enable the pupil to realize that these are not mere fantastic creations without foundation. Just as in the study of the separate deities a collection of the representations of the stories in art by both ancient and modern artists will be most helpful in coming to an understanding of the mythology.

3. In enjoying a beautiful poem or an admirable musical composition we miss much if we let the appeal be made purely to our emotions, if we do not seek to know the author's plan, to find out his purpose and to determine the reason for the various incidents and actions; in other words, the appeal should be to the intellect as well as to the emotions. The young student who will not feel at first a strong appreciation of the aesthetic in Vergil's poetry, of his subtle phraseology and wonderful melody will be interested in knowing why the poem begins just at the point it does, why the landing at Carthage, why the games at Actium, why the games in Sicily,—why the fifth book at all. In the beginning every teacher will probably have to point things out boldly and label them. Vergil selected this for a definite reason; he chose that for a specific purpose. A little later on, if the *thing* is pointed at, the student will investigate the reason and answer for himself and in a surprisingly short time, members of the class are ready to suggest or to bring their solution for approval. Vergil is a master of technique and our pupils miss much if this side of the work is neglected. The reaction of a class to suggestions in the observation of technique is frequently an inspiration to a discouraged teacher.

4. No doubt some of the subjects suggested under supplementary topical studies will be investigated and studied side by side with the regular work. A study of Vergil's similes and a comparison of them with those used by Homer can be effectively carried on in this way as can also the tracing of Vergil's influence upon English authors. Quotations may be read and referred to in connection with the daily lesson as time permits. Then as the different books are completed, mimeographed copies of a number of quotations from English authors may be given out with the request that the Latin passage that suggested the English be looked up and translated. This has been found to be a very effective way of connecting the past and present. An oral report on Vergil's life with the facts given us by Suetonius supplemented by material gained from the author's own poems and from the writings of contemporaries like Horace, in whose works he is mentioned, will always be interesting if well given. Of course the first six books would never be complete without the end of the story and some member of the class will enjoy reading a translation of the remaining six books and giving the narrative in brief form. Then

again there cannot be a real understanding of the author unless his two other productions, the *Eclogues* and the *Georgics*, receive their share of attention. A study of the Augustan Age will throw light on much that would otherwise be meaningless to the student and if reports can be given on other great epics there will be a deeper and more abiding appreciation of the great Roman epic.

In conclusion, the *Aeneid* is not an epic of one people nor of one time—a secret of its lasting attraction. Like the *Trojan Women* of the great Greek Euripides it belongs to all peoples and to all times. Its appeal is universal since in it we can trace the hopes and fears of any nation or of any people. And especially today, in the midst of the mighty conflict all around us, does the hero with the right ever before him and the courage to do the right, the victory of *pietas*—to quote the thought of Mr. Warde Fowler—or the sense of duty and discipline cry out against wanton barbarism and individual passion.

Enthusiasm in the teacher will beget enthusiasm in the student. An accurate knowledge of the subject and all its bearings is the basis of the teacher's enthusiasm.

JESSIE I. LUMMIS, Chairman;  
 MINIA A. MAXEY,  
 JAMES R. DOLLEY,  
*Committee.*

The discussion involved the questions concerning scansion, reading of the Latin, emphasis to be laid on the beauty of the *Aeneid*, the amount that can be read in a year, and whether some Ovid might be read in addition.

The fourth number on the program was a report from the standing committee on Library equipment, prepared by Miss Ada Stewart, Peoria, chairman of the committee. As Miss Stewart was unable to be present, Miss Harriet L. Bouldin read the report, which took the form of additions to Miss Stewart's report of last year and the statement was made that the longer list, previously submitted, could be found in the *University Bulletin* containing the proceedings of the 1915 High School Conference.

The following titles may be added to the list made out last year and published in the *University of Illinois Bulletin*, Number 15, under the date of January 24, 1916, and known as the *Proceedings of the High School Conference of November, 1915*. The list may be found on pages 135-141:

- IV. b. 1. Virgil's *Epische Technik*—Richard Heinze (Teubner text) Stechert. (Very valuable for teachers of Virgil who read German.)
- VI. Arnold, E. L. L.—*Phra, The Phoenician*. .50, Burt.  
 Crawford, F. M.—*Ave Roma*.  
 Jonson, Ben.—*Catiline*.  
 Morris, Wm.—*An Epic of Hades*.
- VII. *Latin Plays*, J. J. Schlicter. .75, Ginn.
- VIII. Paxson, Susan, *Handbook for Latin Clubs*. .60, Heath.  
*The Classical Journal*—Univ. of Chicago Press. \$2.50 per year.

The Classical Weekly—Barnard College, New York City. \$1.00 per year.  
 Art and Archaeology—Washington, D. C. Published monthly.

The following is a minimum list of books for a Classical library. The books here mentioned should not cost more than \$25.00 when the discount has been allowed:

Lewis, C. T.—Elementary Latin Dictionary. \$2.00, A. B. C.  
 Guerber, H. A.—Myths of Greece and Rome. \$1.50, Appleton.  
 Gayley, C. M.—Classic Myths in English Literature. \$1.50, Ginn.  
 Harper's Classical Dictionary. H. T. Peck, editor. \$6.00, A. B. C.  
 Kiepert, H.—Atlas Antiquities. \$1.75, Stechert.  
 Fowler, W. W.—Roman Festivals. \$1.20, Macmillan.  
 Tarbell, F. B.—History of Greek Art. \$1.00, Macmillan.  
 Church, A. J.—Roman Life in the Days of Cicero. .50, Macmillan.  
 Mommsen, T.—History of Rome. 4 vols. (Everyman ed.) \$1.60, Dutton.  
 Duff, J. W.—A Literary History of Rome. \$3.50, Scribner.  
 Wright, W. C.—A History of Ancient Greek Literature. \$1.40, Appleton.  
 Plutarch's Lives. 3 vols. (Everyman ed.) \$1.20, Dutton.  
 Fowler, W. W.—Julius Caesar. \$1.50, Scribner.  
 Boissier, G.—Cicero and His Friends. \$1.75, Putnam.  
 Sellar, W. Y.—Roman Poets of the Augustan Age—Virgil. \$2.25, Macmillan.

The chairman invited the section to visit during the intermission the Classical Library and the Classical Museum. The section then adjourned.

The Classical Section reassembled at 2 P. M., Professor C. M. Moss presiding. He stated that owing to a misunderstanding, Professor George R. Throop, Washington University, St. Louis, was unable to be present and that in consequence the illustrated lecture on the Roman Camp at Saalburg would not be given and that Miss Helen A. Baldwin of the Joliet High School had consented to give an informal talk with an accompanying series of slides showing scenes of general interest to teachers of the classics. The following slides were shown:

Manuscript of Caesar

Bay of Naples

Pompeii, remains and reconstructions, including forum, narrow streets, brick-work, house of the Vettii, house of the Tragic Poet, house of Cornelius Rufus, wall decorations, baking room, shops, etc.

Temple of Neptune at Paestum

Temple by the Tiber

Tivoli

Aqueducts

Tabularium

Forum at Rome

Pantheon

Bridge over Tiber with the island in the river

View down the Tiber showing the Cloaca Maxima

Mulvian Bridge

View of the Palatine showing the temple of the Vestal Virgins at its base



**Vestal Virgin**

Denkmaler children dressed as their mothers

Bas-relief of nuptial scene

Ancient shepherdess and fisherman

Out-of-door dining room for funeral feast

Appian way showing the street of tombs

Modern Appian way

Interior of a columbarium

Roman cinerary box

Catacombs

Mausoleum of Hadrian

Column of Trajan

Jupiter represented as a rain god destroying the enemies of the Romans

Marcus Aurelius

Graffito on wall of imperial palace on the Palatine

Burial lamp showing Aeneas, Anchises, and Iulus.

At the close of Miss Baldwin's talk, Professor Moss called upon Mr. J. C. Hanna, Illinois state supervisor of high schools, to speak for five minutes. Mr. Hanna responded by explaining his own appreciation of the classical languages and stated that many teachers of Latin fail to do good teaching not because of lack of knowledge of the subject but because no one ever showed them how to make a lesson worth while to their pupils. He illustrated by showing how, by mechanical drill on syntax, a Latin recitation might be so conducted as to have all life and interest taken from it, and on the other hand, by emphasis on the human contents of the lesson, the entire class hour might be made of vital interest.

The attendance at both sessions was large and the room was badly overcrowded.

The Section thereupon adjourned.

LAURA E. WOODRUFF,

Secretary for 1915-16.

## COMMERCIAL SECTION

### Morning Session

In the absence of the President, Mr. A. L. Loring, who has removed to Kalamazoo, Michigan, Mr. G. M. Pelton of Evanston conducted the sessions of the conference which enjoyed a gratifying attendance. Without delay, the program was taken up with Mr. I. L. Rogers of Waukegan as the first speaker. His topic was "The Placement of Commercial Teachers". The substance of his address follows:

Through various channels of information as well as experience, I am fully convinced that every teacher of a professional or vocational course should place the welfare of his student *first*.

There are various definitions of the word *teacher*. I believe a Commercial Teacher, in this day and age, must qualify as a business and social leader,—“A man with an education and business vision.” Time was when a teacher could succeed by teaching subjects alone. That time is past. He must teach the principles of human life as well as the text. He must be a leader in his community. It is no longer a question of where did you acquire the knowledge you impart; this is the practical age. The question is: Does your experience qualify you for teaching?

Now if you will follow me we will go down to *rock bottom*. We as commercial teachers have the job of placing students. Do we place them, or because the demand is so great and our supply limited in comparison, do we mis-place them; just scatter them promiscuously about as does a salesman who does not know his goods and is not forced to know them through lack of brisk competition?

I do not wonder that employers are frequently dissatisfied with our product. I believe we mis-place rather than place a great number of really good students. At times, I wish the demand would so diminish that we would be obliged to apply the most rigid laws of economy and salesmanship in placing our students. The product would certainly be better fitted for special consumption. One cannot expect to continue placing goods on the market, unless it is a finished commodity, especially produced for specific consumption. Competition is keen if we but realize it. Here then is the only product that we can conscientiously market—an honest, energetic unit of production with a well balanced general knowledge, upon which he may rely and expand with the experience gained during the apprentice period, so that it will gradually fit him for the place higher up.

When we get down to the real forces employed in the proper placing of students we find them so numerous and varied that it is difficult to choose or eliminate. I will mention the direct forces. *First*, the Teacher. *Second*, the Student. *Third*, the courses of study. *Fourth*, the Employer. The afternoon discussion presents the Third, so it leaves the three personal forces, Teacher, Student, and Employer, for me to consider.

Let us consider the instructor and student together. I find that the rapid growth of Commercial Departments in our High Schools has created a demand for Commercial Instructors which is difficult to supply; resulting, in fact, in a certain number of “hyphenated” Commercial Teachers; teachers highly efficient, perhaps, in text teaching but with little knowledge of the all-important requisites that go to produce the commodity desired by the business world,—Junior Assistant today but the Business Man of tomorrow. This quality that is so lacking in some of us is the ability to impress the student with the proper conception of this all-important period of experience, the apprentice age. The time of amalgamation, as it were, of his basic knowledge with practical experience, resulting in a well rounded, broad business education. Perhaps I can best illustrate these points.

Last May, a teacher made this statement to me: “Every one of my next month’s graduates are placed. Isn’t that fine?” When asked where they would be located, the answer was: “Oh, in the city: they all go there.” Not very definite, was it? I believe, numbers of such graduates have been well trained as routine office help, but is that our aim? When they come to realize that they lack that broad business knowledge which would blend with their early experience, fitting them for the place higher up, will they not be disappointed? Again, it is not unusual to find the enthusiastic instructor who, perhaps unconsciously, through his superior personality, turns out the over-confident, egotistical graduate. The graduate who *dreams* himself capable of at once becoming a Schwem, an Emmerson, or at least an unquestionable authority on business ethics. Eventually he finds himself and realizes that, in order to advance, he must go back and pass through the period of Apprenticeship. This class of graduates, too, are disappointed; and perhaps are too old or too proud to return

to the stage of correct beginnings. The Employer is greatly disappointed in both instances. Have these students been placed or mis-placed?

I again repeat, every student must become well aware of the fact that he must pass through the period of evolution, the apprentice age; the epoch in his experience where general and practical knowledge blend and make for success. If this fact be kept squarely before the student throughout the course, he will willingly be placed where his individuality and general training will become systematized by experience and his success assured. He will be the productive unit which Employers appreciate.

The remaining question is, how best to get the Student and the Employer properly acquainted. This depends to some extent upon the community, but there are a number of general methods that may be applied in any community. The success or failure of these is entirely with the teacher. Briefly, the methods are these:

- a. The commercial instructor should be a good mixer.
- b. He should identify himself with his community through activities in Church, Lodges, Clubs and various social functions.
- c. Organize a Commercial Club in your school and if possible have it closely affiliated with the Commercial Association of your city.
- d. Become acquainted with the various methods and systems of the prospective factories, banks, stores and other places of business, who are to employ your graduates. Install these systems in your various offices. This is office practice and you may feel sure that this equipment for office training is an asset.
- e. Invite various men of high business standing in your community to address your classes and entertain them at your student club meetings.
- f. Have the visiting business men examine your course and criticise it, offering suggestions.
- g. Secure permission for your classes to visit the various industries located in your community.
- h. Get the consent of managers of industries to give your students cards of introduction to them. Have the students interview these managers and prepare papers, to be presented in class, from the information received at the interview.
- i. Of most importance, card-index every student and every employer and, at the graduation season, cross-index student cards and employer's cards, then you will be able to match general qualifications with general demands; special qualifications with special demands and student personalities with employer's personalities.

With the foundation knowledge that we may give our students, with the introduction and growing acquaintance of student and employer, we may feel to a certain degree, at least, that we have placed our students where they will be of high economic value to themselves and the employer.

With these few of the many ways and means that lead toward proper placement of students, permit me to summarize in this one statement: *Get outside the text and get inside the office.*

In the discussion Mr. Briggs, of Rockford, Mr. Irish, of Galesburg, and Mr. Boyer, of Chicago Heights gave their methods of handling the problem. A banquet of the alumni was suggested with a discussion of their needs and the requirements they are called upon to meet in positions. Another would carefully explain the system of promotion to undergraduates, urging them to co-operate by giving the commercial department notice when they change positions. A card



index of firms and candidates was recommended and a consequent fitting of candidates into a position.

The second number was given by Dean Leon C. Marshall of the College of Commerce and Business Administration, Chicago University. He spoke on the subject: "*The Correlation of High School and College Commerce Courses.*" In opening his discussion Dean Marshall gave the historic development of training for business. At first this was done through the apprentice system which was referred to as a school of citizenship which developed business managers rather than office assistants. The simplicity of this task was compared with the growing and complicated industrial revolution about 1750. The development of the private business school with its training in business technique followed about 1840 and the resulting system of education was shown to have been introduced in secondary schools about 1860.

1. Any scheme of correlation must be worked out in the light of complete recognition of the various obligations of the secondary schools to their constituencies. These obligations are many and confusing. The obligation to the student who goes on to college is one of *minor* importance.
2. It follows that a condition precedent to comprehensive, well planned correlation is a provision for a coherent, comprehensive, secondary school business curriculum. This curriculum is today a mediocre assemblage of fragments. It is of course possible to correlate fragments but even this should be done with due regard to the probable whole. The difficulties (note 1) in the way of securing an orderly whole are staggering but we can wisely set no other goal. The chief difficulties are:

Note 1: (a) The lack of vision on the part of the student,

(b) The attitude of the parent toward the longer period of training, and

(c) The dearth of good text books.

3. All this means that we must make up our minds whether it is the function of the secondary school primarily to train business technicians or to develop business managers or to combine the two. Questions of correlation can arise in a significant way only with respect to training for business management for the colleges are, without exception, committed to such training.
4. A curriculum designed to prepare for business management can wisely be constructed only on the basis of a working hypothesis of just what the job, the function, of the business manager is. What he does is what we would prepare him to do. The hypothesis here presented deals with his task as made up of two elements: (a) the *internal* problems of management (note 2) and (b) the *external* problems of management. Below is a partial statement of the range of these fields.
  - (a) General survey of the internal problems of management.
    - The business manager's relation to production.
    - The business manager's relation to distribution (marketing).
    - The business manager's relation to finance (including accounting).
    - The business manager's relation to labor.
    - The business manager's relation to risk taking.

- (b) General survey of the external problems of management.

The commercial organization of society.

The industrial organization of society.

The financial organization of society.

Social classes.

Social control of Industrial activity (including law). (Note 3.)

Physical environment. (Note 4.)

Note 2: A classification of business activities.

Note 3: This is really a study in Ethics but part of it might be taught through Civics.

Note 4: Might be taught in the Commercial Geography Course.

5. Some details of correlation.

(a) Courses which might well be entrusted exclusively to the secondary school.

(Clerical subjects and Bookkeeping.)

(b) Courses which must be given in the secondary school but which might wisely be omitted from the schedule of a student certain to go to college.

(Commercial Law, Accounting and Commercial Geography.)

(c) Courses which must be given by both secondary school and the college, but which should be given in the secondary school that the students who take them there should be excused from taking them in college.

(The survey courses under section 4a and 4b.)

(1) Structure and function of Society—This might be taught in the course in Political Economy.

(2) Internal Problems of Industrial Management—This might be taught through a course in Advertising which should be a study in production, marketing and Commercial organization which should emphasize citizenship and service to one's fellow men rather than dollar chasing!

(d) Is there room for these courses?

In the discussion which was led by Mr. C. P. Briggs of Rockford, the difficulties in administering the commercial curriculum received further emphasis and it was clearly shown that we have no clear course in directing the curriculum of the boy who intends to lead a business career as we do with the one who intends engineering or literary education.

Mr. Comper, of Rock Island, spoke of the growing recognition of commercial studies in colleges. Miss Van der Veen of Joliet asked the question, "How many are heads of commercial departments and how many had the selection of subjects and arranging of courses?" The latter was negatived in spite of the fact that each has special training and knowledge for that purpose. Keys of Kankakee brought up a vital point in asking how the new courses are to be adjusted to secondary schools which must deal with the ability and grasp of students of fourteen years. In answer to queries for material Mr. Marshall referred to the good texts on Economics and to "An Approach to Business Problems", A. W. Shaw, Harvard University Press.

A luncheon hour of pleasant memories intervened.

### Afternoon Session

The session was given to the reports of the Syllabi Committees as follows:

#### Bookkeeping:

G. M. Pelton, Evanston.

Prof. H. T. Scoville, University of Illinois.

In preparing the syllabus in bookkeeping, two main points concerning the nature of the subject have been kept in mind.

1. A study of bookkeeping and accountancy consists of four distinct phases:

- (a) Business transactions, operations and adjustments.
- (b) Accounts.
- (c) Books and records.
- (d) Financial Statements, schedules and reports.

2. It is illogical and impossible to attempt to teach any one of the four phases alone to the exclusion of the other three.

#### FIRST YEAR.

Mr. Pelton.

Fundamental principles, with particular emphasis upon the study of business transactions and their interpretations in the ledger accounts, through the media known as books of original entry. Simple statements showing condition and progress.

#### *Transactions and Operations:*

Definitions of value, transactions, property, etc. An analysis of each transaction, a study of documents and papers involved in transactions, determination of its effect upon the business, upon individuals dealing with the business, and a mental determination of debits and credits involved before recording such debits and credits in the books.

Simple transactions involving the buying and selling of merchandise for cash and on account; the treatment of merchandise inventory; the receiving and paying of cash on account; the receiving and paying of credit instruments; the redemption and discounting of credit instruments; the practice of allowing discount on both sales and purchases; the practice of returning goods bought or sold; the exchange of property for property, commonly called acquisition of property, as furniture and fixtures, equipment, and so on; the exchange of property for uses or services, commonly called the incurring of expenses of various sorts; the formation and conduct of partnership and division of profits among partners in simple cases; the consideration of unexpired and accrued items on the books commonly called sundry resources and sundry liability inventories; the treatment of any other transactions which seem to be allied to any of those mentioned; general business practice and procedure.

#### *Accounts.*

The object of the most common accounts, when credited, when debited and how and when closed, and the relation of the balance to the financial statements, as represented by some of the following: cash; merchandise (including all its subdivisions for returns, allowances and discount); personal (customers and creditors); notes and bills receivable and payable; fixed property; expense (subdivided into several classes as selling, general, interest, etc.),—account used to record inventory of merchandise; miscellaneous income accounts, as interest, etc.; accounts used to record inventories of accrued and unexpired items, commonly called resource and liability inventories; proprietor's account; partner's



capital account; partner's drawing, personal or private account; trading and profit and loss accounts.

Other accounts which might arise in first year's work are: controlling accounts (accounts receivable and payable); C. O. D.; petty cash, imprest fund or cashier's fund; depreciation; reserve for depreciation; bad debts; reserve for bad debts; consignments and a few others which might be considered as quite closely allied to some already mentioned.

The study of accounts should include a study of terms used in connection with them, such as "debit", "credit", "an open account", "a closed account", "closing an account" "account in balance", and similar terms.

### *Books and Records.*

The use of and correlation existing among the simpler books and records of the average trading retail or wholesale business, of which the following are suggested as being in most common use: general ledger; simple journal; columnar journal (not more than four columns; simple cash book; columnar cash book (involving discount on purchases and sales, bank, controlling account and expense columns in some reasonable combination); books in which to record merchandise purchased, sold or returned, allowances or rebates; check book; bank pass book; notes and bills receivable and payable books; trial balance book; statement of account; bills; invoices; sales orders, or carbon copy sales books; bank deposit slips; and other simple books and records peculiar to specific lines of business.

Other books arising in first year work, which may or may not be considered as essential to the illustration of first year principles, are: Invoice book; order book; petty cash book; insurance expense book; inventory book; subsidiary ledgers, either with regular ruling or with balance columns; cash register strips; check register; freight book, including car record; and other auxiliary books peculiar to certain lines of business.

In connection with the study of books, emphasis should be placed on some of the following conventionalities: Posting; verifying postings; ruling; use of red ink; method of taking a trial balance; use of check marks; finding errors; correcting errors; closing accounts; balancing accounts; filing; footing; carrying forward; order of accounts in the ledger; spacing accounts; closing cash book; indexing ledger; preparation of proof sheet.

### *Financial Statements, Schedules and Reports.*

The method and time of preparing and the use of the more common statements, schedules and reports.

Resources and liabilities listed in good form (commonly called statement of resources and liabilities, balance sheet or financial statement); profit and loss statement, also called loss and gain statement or trading statement; combined trading and profit and loss statement.

Supplementary statements, schedules and reports may be prepared as the nature of a specific business might require. For example, schedules of accounts receivable and payable; schedules of notes receivable and payable with interest accrued; expense analysis sheets; and inventory schedules might be considered.

In a study of statements, some of the following terms should arise for discussion: The accounting period; the fiscal period; gross profit; net profit; selling profit; cost of sales; net profit on sales; net returns from sales; net worth; net capital; net resources; total resources; current resources; current liabilities; fixed resources; six-column balance sheet; account form, report form, technical form and American form statement; floating property; quick assets; intangible assets; and others depending on the method of arranging items in the statements.

## SECOND YEAR

Mr. Scoville

A full second year of bookkeeping is not advocated. One semester of second year work can be made to satisfy all necessary requirements of the students for practical work. However, in order to obtain advanced standing in a college or university, it is doubtful if three semesters of bookkeeping could be given any more credit than two semesters, while four semesters work in high school could be given twice as much recognition in the university as two semesters.

A continuation of the correlative study of business transactions, operations, and adjustments, accounts, books and records, and financial statements, schedules and reports. New transactions are introduced which necessitate new accounts.

A few new books and records are introduced and some modifications of financial statements and schedules prepared. Emphasis should be placed on adjustments and operations within the business. These include departmental adjustments, apportionable charges and cost accounting.

Some cost accounting operations and adjustments should be treated, such as the proper distribution of labor, materials and burden over the products of the shop or factory. A cost accounting set to be worked is not prescribed unless the bookkeeping course covers four semesters. In that case a cost set would be desirable.

*Transactions, Operations and Adjustments.*

New phases and analysis of the more important transactions studied during the first year. Transactions peculiar to the corporate form of organization, as subscriptions for stock certificates, issue of certificates, disposition of profits in a corporation. Some form of voucher system included with other work.

Other new transactions of which some of each should be given a place in second year work include: assessment of stockholders, bond issues at par, discount and premium, assignment in bankruptcy, collateral security, contingent liability, coupons paid, defalcation, acquisition of an equity, appreciation, goodwill, income tax requirements, insolvency, installment stock subscriptions, judgment note, liquidation, outlawed claim, patents, secret reserve, treasury stock, acquisition, trustees' affairs, and various operations and adjustments arising in manufacturing.

*Accounts.*

The optional accounts mentioned for the first year should be taken up in the second year if they have not been studied previously. Also, the following new accounts are prescribed for a full second year course: Surplus, common stock, dividend, goodwill, manufacturing, subscriptions or subscribed stock, unsubscribed stock, vouchers payable.

Other accounts arising if cost accounting and other advanced work is given in a full second year course, might be the following: Raw materials, manufacturing expense, factory supplies, tools, patterns, materials in process, finished goods, cost of sales, productive labor, non-productive labor, assessment, bonds, discount on bonds, premium on bonds, bonus, goodwill, installment subscriptions, patents, copyrights, treasury stock, sinking fund, branch store, and agency.

*Books and Records.*

Some or all of the following books or records should be presented in second year work, either by practical use or from a study of principles involved: Loose leaf books of original and final entry, cash journal, stockholders' ledger, stock certificate book, installment certificate book, voucher, voucher jacket, production order, time ticket, payroll book, requisition blank, requisition

journal, job cost sheet or ledger, materials ledger, finished goods ledger, and other books or records arising in special lines of business.  
*Statements, Schedules and Reports.*

Few new statements are necessary. The manufacturing statement should be taken up in practice or its theory discussed. Different ways of arranging or presenting the trading and profit and loss statements and balance sheet should be given attention. Emphasis should be placed on the interpretation or reading of statements, and their arrangement in condensed or schedule form accompanied by percentages. Comparative statements might be introduced to advantage. Various reports required to help in the management of a business, and the cooperation of departments, might be taken up as time permits.

#### COMMERCIAL ARITHMETIC

H. A. Finney, Walton School Chicago

(*Position in the High School Curriculum*). While some schools, whose graduates become teachers in rural schools, may offer this course in the senior year as a general arithmetical review, its logical position in a distinctly commercial course appears to be the freshman year, for the following reasons:

- (a) It is distinctly valuable as a prerequisite of bookkeeping.
- (b) Its training should increase the economic usefulness and the earning capacity of those pupils whose high school days are limited.

(*Purposes of the Course*). The function of this course is essentially different from that of other high school mathematics. While the faculty of analysis should be cultivated, the greatest emphasis should be placed on efficiency in those mathematical processes which the pupil will be required to employ in his first business connection. Such efficiency will involve:

- (a) Accuracy in the fundamental processes which are the basis of all calculations.
- (b) Rapidity in performing routine calculations.
- (c) Skill in tabulating figures in ink on ruled paper.
- (d) Clear comprehension of the principles involved in the mathematical processes. This comprehension will depend largely on a thorough understanding of business customs and procedure, and the teacher should therefore endeavor to make these matters as much as possible a part of the pupil's experience. For this reason, problems should be avoided if they do not conform to business practice. For instance, a problem in which the pupil is given the date, the total premium and the fraction of insured value, and is required to calculate the value of the property insured, is detrimental to a comprehension of commercial procedure and arithmetic, for the pupil is too inexperienced to distinguish it from true commercial problems.
- (e) Familiarity with a *limited* number of the most practical short methods.
- (f) Ability to perform simple calculations "mentally."
- (g) *Habitual proof* of work.
- (h) Knowledge of the processes of arithmetic involved in *general* business affairs; a high school graduate is *not* expected to have a working mastery of processes applied in specialized business.
- (i) Familiarity with such business forms as invoices, checks, notes and drafts.

#### *Suggested Topics.*

##### *Fundamental Processes.*

(It is suggested that classes be *tested* in their ability to perform these fundamental operations; the time devoted thereto being based upon the results of such tests.)



## Addition

Both vertical and horizontal

Proofs by casting out nines.

## Subtraction

Subtraction by addition of complements.

## Multiplication

## Division

## Average

## Common Fractions

Restricted to those of frequent application.

Decimal Fractions

## Aliquot Parts

## Percentage

Preferably without use of inverse problems.

*Measure*

## Denominate Numbers

Special attention to common tables (no specialized tables).

## Graphs

Illustrating the methods by which comparative business statistics are presented. This subject will give opportunity for further work in percentage calculations.

It will be noted that Metric System and Fractional Business Measurements (Painting, Plastering, etc.) are omitted. It is believed that these topics should be postponed until the end of the year to insure the study of more important material.

## The Arithmetic of Trading

## Purchases and Sales—Invoices.

## Discount—Cash Trade.

## Payment for Goods

Making Change

Payments by Check

Bank accounts; endorsements; bank's account with depository; the clearing house.

Domestic Exchange—Bank Drafts.

Postal Money Orders; Express Money Orders; Telegraph Money Transfers.

## Collecting Bills.

Statements

Commercial Drafts.

## Cash and Personal Accounts.

## Inventories

## Periodic; Perpetual.

## Gross Trading Profit.

## Interest.

## Simple Interest

It is advisable to *concentrate* on *one method* as far as possible, demonstrating the sort of methods applicable thereunder. Where an attempt is made to teach too many methods the pupil masters none, and has recourse eventually to the cancellation method which is very cumbersome.

## Compound Interest.

## Partial Payments.

## Savings Banks.

## Bank Discounts.

Non-interest-bearing paper.

Interest bearing paper.

## Expenses and Net Profit.

## Wages; Payrolls

Day and Hour Rate

Piecework

Differential Rate, Bonus and other modern efficiency wage.

Systems

Commissions.

Postage including Parcel Post.

Depreciation.

Straight Line Method

**Diminishing Value Method.**

Advertising, with percentage analysis of results.

Insurance—Property

Calculating premiums on one year and term policies.

Agent's Commission

Cancelling Policies

Short Rate

Pro-rate

Taxation

Property Tax

Rate building

Calculation of tax

Income tax

Customs Duties

(The two latter topics should be treated very briefly.)

Classification of Expense

Manufacturing

Selling

General

This topic will afford an excellent opportunity for Statistical work and percentage analysis.

Net Profit

For the business as a whole

By departments; department store cost books.

## Business Organization.

Individual Proprietorship

Preparation of Simple Revenue Statements

Insolvency and Bankruptcy

Partnership

Profit Distribution

Interest Adjustment

Corporation

Stocks

Dividends and assessments

Bonds

Reserves and Funds

## Efficiency Statistics

Factory Costs

Bases of distributing overhead

Labor Hours Method

Labor Cost Method

Material Cost Method

Machine Rate Method

Tabulations for Business Managers

Much material of this sort can be obtained from local business houses, and the subject will awaken the pupil's interest in the tabulation of comparative

statistics by which the development of profit or loss producing factors of the business is noted.

*General Suggestions.* It will be noted that the organization of the topics is based on related business experiences rather than on mathematical relations. It is believed that this will be of advantage in enabling the pupil to form proper concepts.

The major portion of the recitation period should be devoted to:

Discussion of business customs and methods

Rapid calculation in addition, subtraction, multiplication, division, fractions, aliquot parts, discount and interest.

"Mental Arithmetic"

Dictation exercises

Short Methods

Frequent tests involving knowledge of processes speed and accuracy.

Analysis and explanation should be required only when new subjects are taken up.

The teacher should get outside the book as much as possible. Prepare original problems based on local conditions and make it a point to find out the fields of employment in which high school students may find engagement and the nature of the work they will be called on to perform.

#### COMMERCIAL GEOGRAPHY

A. Q. Larson, Oak Park

The study has three aspects: the informational, the cultural, and the vocational. The general aim is to develop an appreciation of the relation of the resources, industries, and commerce of the United States to the resources, industries and commerce of the other countries of the world. The special aim is to make the student familiar with the sources of information about the industry in which he may become engaged, to make him able to analyze the industry and see its relation to other industries.

This syllabus is prepared from a questionnaire which showed two trends: the study of industries and the study of countries. Therefore, this outline favors the study of industries with the study of countries as a background.

#### Semester Course

The order of presentation is optional with the teacher.

1. A topical study of the industries of international importance, each one of these to be studied in connection with the country leading in the particular industry.

Outline—A.—

- (a) History of Industry
- (b) Location Factors
- (c) Process
- (d) Products and By-Products
- (e) Local and Foreign Production. (Use graphs in interpreting statistics.)
- (f) Variations of Industry.
- (g) Future of Industry.
2. A study of Conditions Affecting Commerce and Industry.
  - (a) Physical.
  - (b) Social.
3. A study of the following countries.
  - (a) United States and Possessions.
  - (b) Canada.
  - (c) Mexico.
  - (d) Central America.



## (e) Islands in the Carribean.

Suggested outline for the study of countries.

Outline—B.—

1. Situation.
2. Size and Population.
3. Government and
4. Climate.
5. Chief Industries.
6. Foreign Trade.
7. Cities.
8. Transportation Facilities.

## Second Semester

1. A study of the following countries.  
(Use Outline B.)
  - (a) South America.
  - (b) European Countries and *Possessions* of Each Country.
  - (c) China.
  - (d) Japan.
2. Trade Routes.
3. Tariffs and Transportation Rates.  
(Show restrictions and growth commercially by figuring the rates.)
4. A topical study of the industries of international importance, each one of these to be studied in connection with the country leading in the particular industry. (Use outline A.)

## COMMERCIAL ENGLISH

Miss Charlotte Van der Veen, Joliet, Ill.

## Introduction to the Syllabus

Since the whole question of business English, in differentiation from academic English, is merely one of viewpoint and approach, a syllabus of business English should concern itself, not as much with what is taught as with the manner in which it is taught. The skeleton may appear to be made from the same old dry bones, but they are to live anew. Because this is so vitally true, it has seemed imperative that we precede the syllabus proper with an introduction that may seem at first glance superfluous and altogether foreign to a mere outline. Moreover, it has seemed necessary to prefix the suggestion of what we should teach with some suggestion as to how it should be presented.

The study of English grammar and rhetoric should be a study of them in their most simple and obvious applications but with such attention to inflected forms as will make possible the study of other languages and the understanding of the laws of agreement. This should be accompanied by some study of sentence structure and the paragraph and the study of diction. The most frequently needed and the most definitely determined rules of punctuation should be presented and then drilled upon in all written work. The use of the dictionary and the rules of spelling and syllabication can not be too much emphasized throughout the course and should be especially stressed in freshman classes. Oral English of the liveliest type and concerning itself with present day topics will furnish the interest needed. Oral work in freshman classes could profitably concern itself with current events, especially those that touch the activities of the business world, and there could be introduced even that early simple attempts at selling and collecting and in the statement of the business problems that enter the child's own experience. In all this he may get his first acquaintance with the necessary regard for the "other man's viewpoint." Let the reading done in class and reported on in class be treated from the standpoint, not of literary vivisection but of an attempt to learn human nature through the

powerful delineations of it left us by the great masters. A play by Shakespeare, an essay by Bacon, a tale by Hawthorne, a study of Kipling's *Laws of the Jungle* can all be made intensely interesting and of highest business value by a discerning study through them of those elements in individual human nature and in organized society which a man must understand if he it to maintain successfully throughout his life the "you attitude" so fundamental in business.

Let the great masters be read, then, from the standpoint of the play of human motives and emotions, read dramatically and swiftly, not torn apart and studied under the microscope. Let us remember, too, that a modern classic is better than an ancient one for giving present day contacts, and that much of our modern magazine writing deals with our modern business world into which these children are to go. There should be much and rapid reading, reading done for the sake of learning to enjoy aptness of description, the play of motive, the pure music of good writing; reading also done with the definite purpose of enlarging the vocabulary. Of all the pupils in the high school, those most needing a varied vocabulary are the stenographers and those whose writing is to be done, not for furnishing recreation, but for bringing results in conviction and action.

In our teaching, three things must we hold in mind:

- I. It must all be kept *simple*. Spelling rules and rules of punctuation, grammatical constructions, very especially the study of the dictionary, will all need much illustration, much patient drill, much simplifying if all that work is not worse than wasted. Our arch sin in high school teaching is that we forget that we are teaching little children and we try to foist upon them the undiluted results of our own specialized study in the postgraduate school. The study of human motive must be translated into terms of their own experience, and that experience is a very limited one.
- II. The course suggested admits of almost endless correlation. His study of history and geography can be made to help the child into some reasonable knowledge of the business world in which we live and its organization. His work in oral English may become to him in part a course in public speaking, teaching him enunciation, correct breathing, poise and self possession before an audience. Other correlations suggest themselves to us all.
- III. Each year our teaching must have about it a certain finality. For that reason it seems better to teach for all four years much the same general content, simply teaching it more intensively each year than to divide the content into four different parts. Each year many leave the high school and no child ought to leave, be it even at the end of the first year, without knowing, for instance, how to observe the accepted form in letter writing, without sensing to some degree the need in business of the "you attitude", without knowing definitely and rationally the laws that govern correct speech and spelling and punctuation. The business world uses not only our high school graduates but uses constantly hordes of those that left school early. We must remember, too, that there will always be those that enter the later years of the course in order to fit themselves for office work and that they will not have had the work of the earlier years. For their sake we may not take for granted that the work of the earlier years is done once for all. (The spiral method in Arithmetic was cited as showing much of the **general plan**.)

## A FOUR YEAR COURSE

## First Year

- One-fourth: applied grammar and rhetoric.
- One-fourth: spelling (including always syllabication) and punctuation.
- One-fourth: oral composition and so much simple letter writing as is necessary to give the needful knowledge of form and to teach a bit about the "you attitude."
- One-fourth: reading. (for vocabulary).  
(Separate fourths of years are not intended but these ratios combined in a year's work.)

## Second Year

- One-half: Grammar and rhetoric, stressing the finer points in syntax and diction.
- One-tenth: Spelling and punctuation.
- One-fifth: composition, both oral and written; business situations discussed either in oral debate or in written letter.
- One-fifth: reading. Definite vocational reading may be introduced. Business magazines may be used in part. But the year's reading ought to include stories, novels, essays, plays and poetry of high literary value.  
(Ratios combined in a year's work as in the First Year).

## Third Year

- One-fourth: review of work in punctuation, spelling and applied grammar and rhetoric. If any of the standard texts on business English are at this point adopted, they will be found to give just some such review.
- One-half: business forms, particularly letter forms, with some attention to social and official forms. Some study should be upon business letters with attention to the different *types* of letters. The handling of letters, the opening of them, their distribution, filing and duplication should be studied as well.
- One-fourth: business reports made both orally and in writing. Informal discussions and formal debates on business ethics, business requirements, business etiquette give abundant source of material for work in oral composition that would never grow dull. Business readings more technical than heretofore. By this time the study of bookkeeping, commercial geography, industrial history, commercial law, economics, and civics should give a large and varied line of readings upon which to draw. Literary Digest, Public Opinion, Review of Reviews, System, and the summaries of world events given in all our best magazines and the Saturday Evening Post with their faithful delineations of the business world of today will make a reading text far from dull.  
(Ratios combined as above).

## Fourth Year

Work in applied grammar and rhetoric, in spelling and punctuation ought by this time to be necessary only incidentally, but ought never to be lost sight of nor should vigilance relax. This year should largely be devoted to that division of oral composition and business writing that is commonly called salesmanship and advertising.



In salesmanship the emphasis should be upon oral composition and it may be divided roughly into two kinds, the sales talk of the commercial traveler or agent and the sales of goods over the counter. The fundamental psychology in successful selling should be made clear, but it is easy to become too technical in teaching to high school children the psychology of selling, of advertising, or, for that matter, of teaching. Actual practice before the class and criticism by the class goes farther towards teaching practical salesmanship than does over much pure theory.

In advertising again there must be some study of the psychology of advertising and a good deal of study of the technique of advertising. But again the actual practice in writing advertisements, the criticism in class of such efforts, the critical study of current advertising in magazines, and the reading of the advertising periodicals will outweigh in practical value such theoretical study. One bit of actual work done for the local merchants in either salesmanship or advertising will be more profitable to the pupil than many exercises performed simply as class assignments.

Printer's ink and kindred magazines will be eagerly devoured and will clinch the four years' training towards a business attitude of mind. After the three years of varied reading already recommended reading in class for a day a week during this fourth year ought to be sufficient. By this time, there should be developed the ability to read with ease and delight the great mass of literature, historical, geographical, political, philosophical, imaginative that should enrich the mind and broaden the horizon of the modern business man.

### A Two Year Course

But if two years can be had in business English, it would seem advisable that those two years be the third and fourth of the high school course, especially if shorthand comes in the fourth year as it would seem that it should.

#### First Year.

It should duplicate very nearly the third year of the above course, save that there would be greater emphasis placed upon the work in applied grammar and rhetoric and upon formal work in spelling and punctuation, giving approximately one-third of the year to all this. It would in many cases be less a review than a first study of definite work in punctuation, spelling and syllabication. The work in business letters and their types ought not to be much abbreviated, and that would mean that no more than one-sixth of the time could be given to oral composition and reading. The reading would have to be simpler since the preparatory steps towards reading from the business man's standpoint would not have been taken.

#### Second Year

It could be essentially the same as the fourth year of the four-year course. Again it would be necessary to remember that the senior whose training in English has consisted of two years of academic English as it is usually understood and of one year of business English would not be able to take so stiff a diet as would the senior taking the fourth year of the course outlined above. His work in salesmanship and advertising would involve more review of the technicalities of written English and he would not so unconsciously adopt the business attitude in his writing and in his sales talk.

### A One-year Course

Schools that can give but one year of business English would do well to make it a third-year study, preceding shorthand and typewriting.

They would have to stress the application of formal grammar and rhetoric, to put emphasis upon spelling, syllabication, and punctuation, to teach business forms, especially the forms of business letters. They would have to do in-

cidentally what they could in building up a business vocabulary and the dictionary habit. They could do little with reading—save in suggesting interesting lines of reading for business people and all they could do in oral composition would have to be done by the way. They could make no exhaustive study of the types of business letters; they could, however, outline some classification of types and write at least a few letters under each type.

The year's work would of necessity be largely a drill upon technical perfection in form and a persistent training out of bad habits. Through it all sight must not be lost for a moment of the business view-point, which will prove in all likelihood to be a new idea to the student and which he must not be allowed to close the year without getting. Some attention will have to be given to filing, but in such schools the burden of work in office practice is sure to fall upon the teacher of typewriting, and much of the work in spelling, syllabication, vocabulary, and punctuation will fall also there and upon the teacher of shorthand.

Miss Van der Veen distributed a carefully prepared digest of the questionnaire on which she based her discussion. She also referred to "A Proposed English Course for Technical High Schools" prepared by a committee of five for The California State Association of English Teachers. Teachers are urged to procure this from Mr. A. J. Cloud, Deputy Superintendent of Schools, San Francisco.

#### COMMERCIAL LAW

A. R. Williams, Normal, Illinois.

##### *One Semester*

#### I. Preliminary:

Sources of Law—General Divisions: Origin of Commercial Law: Elementary Laws of Property: Court Systems and Trial Procedure. (Note: Criminal Aspects in Civil Suits.)

#### II. Contracts:

1. Essential features. Parties; Consideration; Agreement; Subject-matter. Special application of cases.
2. Structure and interpretation: Executory and Executed Contracts; Expressed and Implied Contracts; Simple and Formal Contracts; Valid, Voidable, and Void Contracts; Unilateral and Bilateral Contracts.
3. Formation of Contracts: Memoranda. Sealed Instruments. Severally. Joint Contracts. Statute of Frauds. Preparation of Contracts.
4. Operation of Contracts: Rights and Liabilities of Parties; Third Party Rights and Obligations: Assignments, with special reference to trusteeship and bankruptcy. Cases.
5. Discharge of Contracts: Performance by tender. Performance by act. Performance by agreement. Discharge by agreement. Discharge by breach. Discharge by operation of the law. Frauds and other torts. Statute of Limitations. Bankruptcy Act.
6. Actions at Law and Equity under Contracts:
  - a. Remedies—classification and interpretation. Cases.
  - b. Defenses—classification and interpretation. Cases.
  - c. Equitable adjustments and remedies.

#### III. Sale of goods:

Formation of Sales Contracts. Forms in common use. Statute of Frauds as applied. Warranties—expressed and implied. Transfer of title. Chattel Mortgage. Delivery. Rights of Action for both buyer and seller. Uniform Sales Act. Cases.

## IV. Negotiable Instruments:

Essential features. Glossary of Terms. Types of Commercial Paper. Details of Construction. Requisite Forms. Endorsements. Details of Negotiation. Rights and Liabilities of Original Parties. Rights and Liabilities of Subsequent Parties. Detail of Presentment for each form. Protest and Notice. Non-negotiable papers. Cases.

## V. Real Estate:

Real Property. Titles. Forms of Land Contracts and Deeds. Conveyancing. The Torrens System. The Real Estate Mortgage and its Discharge. Trust Deeds. Landlord and Tenant. Leases. Wills.

## VI. Bailments:

Definitions. Degrees of Care and Negligence. Classification as to benefits. Deposit. Commission. Gratuitous Loan. Pledge. Hire of Things. Hire of Services. Mechanic's Lien Law. Innkeepers. Warehousemen. Common Carriers of Freight and Passengers. Cases.

## VII. Agency:

1. Power of Attorney. Ratification. Scope of Authority. Revocation.
2. Rights and Obligations of Principal. Rights and Obligations of Agents. Rights and Obligations of Third Parties.
3. Master and Servant. Employer's Liability. Workman's Compensation Act.

## VIII. Partnership:

Kinds of Partners. Articles of Copartnership. Rights and duties of partners—to each other and to third parties. Dissolution of partnership,—by agreement,—by act,—by operation of the law. Reorganization and Liquidation of Partnership.

## IX. Corporations:

Kinds of Corporations. Rights and Liabilities of Stockholders. Procedure of Formation,—of organization,—of management,—of dissolution. Reorganization and Liquidation.

## X. Indemnity Contracts:

1. Insurance: Life, Fire, Marine, and Casualty.
2. Guaranty and Suretyship. Definition. Rights and Liabilities of parties.
3. Personal Bonds. Conditions:—How secured and rights of parties. Note.—The sequence is not intended to be rigid and aims to establish flexible boundaries which may be changed reasonably to suit the requirement of the teacher of initiative.

## ECONOMICS

Mr. A. L. Loring, Kalamazoo, Mich.

- I. Some dominant characteristics of the present economic order.
  - A. The nature of Economics as a Social science.
  - B. The creation of wants. Human needs.
  - C. Cost of marginal utility.
  - D. The principle of cooperation.
- II. Production.
  - A. The factors of production.
    1. Land.
      - a. The point of diminishing returns.
      - b. Forces affecting the law of diminishing returns.
    2. Labor.
      - a. Population vs. Land.
      - b. The Malthusian theory.
      - c. The kinds of division of labor.
    3. Capital.



- a. Capital and non capital goods.
- b. The creation of capital.
- c. Corporation capital.
- d. Large and small scale production.
- e. The entrepreneur's function one of capital.

### III. Exchange.

- A. Value.
  - 1. Supply and demand.
  - 2. Normal price under fair competition.
  - 3. Monopoly value.
  - 4. The law of monopoly.
- B. Money.
  - 1. Standards of value.
  - 2. Bimetallism.
  - 3. The gold standard.
  - 4. Fiat money.
  - 5. Ms. forms of money.
  - 6. The movement of money.
- C. Banking.
  - 1. Banking institutions: Bank credit; discounts; reserves.
  - 2. State and National banking laws.
  - 3. Federal Reserve Bank.
- D. International Trade.
  - 1. Nature of; advantages of—
  - 2. The balance of trade—how "favorable".
  - 3. International trade restrictions.
    - a. The revenue tariff.
    - b. The protective principle.
    - c. Recent tariff history.

### IV. Distribution.

- A. General Considerations.
  - 1. Relation of income to the three factors of production.
  - 2. The difference between real and money income.
  - 3. Classes of income.
- B. Rent.
  - 1. Rent vs. Interest.
  - 2. Rent under uniform intensity of cultivation.
  - 3. Rent under actual conditions.
  - 4. The capitalization of rent.
  - 5. The law of diminishing returns as applied to rent.
  - 6. The unearned increment. Present methods of taxing unearned increments.
- C. The Wages of Labor.
  - 1. Demand and supply.
  - 2. The effect of labor saving machinery on demand.
  - 3. The subsistence theory of wages.
  - 4. Supply of labor in different occupations.
  - 5. The wage contract. (Eight hour day, classes of labor, etc.)
  - 6. Problems of Labor organizations.
    - a. Collective bargaining.
    - b. Economic justification of labor organizations.
    - c. Contracting types of labor organizations.
    - d. Arbitration.
      - 1. voluntary.
      - 2. compulsory.
    - e. Labor legislation.
    - f. Immigration and the labor problems.
- D. Interest.
  - 1. Why interest can be paid. Time values.

2. The investment and replacement of capital.
3. The rate of interest. Gross and net interest.
- E. Profits.
  1. The wages of the entrepreneur.
  2. Gains of bargaining.
  3. Gains of non competition, monopoly gains.
- V. Public Finance.
  - A. Revenues.
    1. Taxation.
      - a. General characteristics.
        1. The equity of taxation.
        2. Direct and indirect taxes.
      - b. Kinds.
        1. Customs duties.
        2. Internal revenues.
        3. General property tax,—inheritance, corporation, etc.
        4. Income tax.
    2. Minor sources of revenue. War tax, license, fines, etc.
  - B. Expenditures.
    1. Justification of increase.
    2. Waste in Expenditures
 

Useless offices, Harbors & Rivers Bill, etc.
- VI. Social Reforms, or Economic Functions of Government.
  1. The conservation of National resources.
  2. The problem of monopolies.
  3. Transportation.
  4. Socialism.
  5. The single tax.
  6. Labor arbitration.

Note: This may be shortened.

- VII. A History of the Early Economic System.
  1. Ancient economic ideas.
  2. Economic ideas of middle ages.
  3. Adam Smith and the classical school.
  4. The growth of the historical school.
  5. Early American economists.
  6. Present trend of economic thought.

Note: This may come before section II.

Proposed texts suitable for high school economics

E. J. Bullock: Introduction to the Study of Economics. Silver, Burdett and Company.

J. L. Laughlin: The Elements of Political Economy. American Book Company.

Burch and Nearing: Elements of Economics. Macmillan.

Ely and Wicker: Elementary Principles of Economics.

Suggested readings and texts for supplementary material

VanHise: The Conservation of Natural Resources.

Jenks: The Trust Problem.

Johnson: American Railway Transportation.

Henry George: Single Tax.

Sparzo, J.: Elements of Socialism.

Suggested works for use of teachers

F. M. Taylor: Principles of Economics, Published by the University of Michigan.

Chapters 8, 9, and 10 on Price Determination.

Chapters 2 and 3 on Production.

Ely: Outlines of Economics. Macmillan.

Hamilton, W. H.: Current Economic Problems, University of Chicago Press.

Gide and Rist: History of Economic Doctrines. D. C. Heath and Company.

#### SHORTHAND

D. C. Hilling, Peoria, Illinois

It is not within the province of this report to discuss the educational value of these subjects, but to prepare and submit a syllabus of each for the consideration of this conference. This has been done after thorough investigation of the courses in this and other states.

It is generally conceded that the courses in shorthand and typewriting should extend through a period of two years, with five 40-minute periods a week, and thirty-six weeks each year. Opinions vary concerning the years for beginning the courses. About ten per cent of those who outline these courses think they should begin the first year; 12 per cent, the second year; and 78 per cent, the third year.

The reasons set forth by the great majority of schools for the delay in offering these courses are two fold: first, the first two years are open for a thorough training in academic subjects, providing for a better foundation upon which to specialize; second, at the close of the fourth year they enter upon their business vocations fresh from their classes at the highest point of their efficiency (in so far as training is concerned) and less liable to failure.

Those who advocate offering these subjects the first or second year do so with the idea of attracting students to the high school, especially those who desire the subjects early in the course and do not intend to complete the high school course.

This plan has the advantage of offering the subjects to a greater number of students, but it has the greater disadvantage of placing a student at the close of the second or third year in the position of choosing between accepting a mediocre situation in some office, or completing his course. As a result, about 40 to 50 per cent drop out of school. Also if the stenographic and typewriting courses are completed the second or third year, a review is necessary near the end of the fourth year, or a short course in office practice, in order to keep up speed and accuracy.

Generally speaking, most schools attempt to complete the theory of shorthand the first year; i. e., a study of the fundamental principles in the dictation of such groups of words, phrases, sentences, letters and other matter, as will fix the language in terms of the system studied.

Special attention must be given to the making of well defined outlines. It is not considered any waste of time to devote a considerable amount of practise to shorthand penmanship. Drills with well sharpened pencils; upon the blackboard; and with pen and ink are necessary to the fixing of shorthand outlines and skill in execution.

The second year is devoted to speed practice; the application of the system in various vocations,—mercantile and professional; general dictation; and transcriptions. Practical use of shorthand should be made whenever opportunity affords.

#### First Year

Theory complete.

Drills in shorthand and penmanship.

Supplementary practice:



Dictation of words, phrases and sentences applicable to lessons.  
 Beginners Letters.  
 Helps from author of text used.  
 Theory plates and exercises.  
 Study of the shorthand magazine for the system used.  
 Regular tests.

#### Second Year

Text: Theory reviewed.  
 Speed practice.  
 Drills: Penmanship.  
 Phrasing.  
 Form Letters.  
 Copying and reading plates.  
 Advanced Dictation:  
 Practiced Matter, 100 to 120 words a minute.  
 New Matter, 80 to 100 words a minute.  
 Reporting and Professional Service.  
 Office Training.  
 Business Ethics.

#### TYPEWRITING

D. C. Hilling

Typewriting should be begun at the same time as the shorthand so that the operation may be automatic when ready for transcriptions. It is the general opinion that operation by any other than the "Touch Method" is not typewriting suitable for business purposes.

Training in typewriting should first of all include a thorough understanding of the machine,—its parts, mechanism, and care; and the operation of the various parts as the instruction progresses.

The theory or drill exercises, as found in the standard manuals, should be completed the first year. This work should be under the direct supervision of the teacher. It is during this period that faulty habits of position and fingering are acquired.

As in most subjects, much depends upon the character of the instruction the first year, especially the first semester. Careful attention should be given to position and fingering. Assuming at all times the correct position of the body, hands and feet. The position of the hands upon the key board is of vital importance. Instead of looking at the keyboard for this instruction, the student should observe the correct position and action from a chart of the keyboard and finger position hung in a convenient place on the wall. If the instruction at this stage is as it should be, no mechanical device is necessary to obscure the vision of the keyboard. No more so than in teaching of piano lessons.

Lax or indifferent habits should not be permitted.

Training the second year should include machine transcription of the shorthand dictation; direct dictation; copying from plain copy; manuscript and rough draft; filling in of legal instruments and commercial forms; tabulation; manifold; stencil cutting, etc.

Drills for speed and accuracy upon all subject matter should have a regular place upon the program. Regular tests should be given under the same rules and regulations as obtain in the International Rules and Regulations governing contests.

Reports from those schools whose teachers are in close touch with the requirements of modern business conditions, reveal more conservative standards. In shorthand they would require for credit 80 to 100 words per minute; typewriting, 40 to 70 words per minute.

## Typewriting

## First Year

Operation: By the touch method.

The Machine: Learn its mechanism, adjustments, relation of its parts and how to clean and oil it.

Drills: Position, finger exercises and lessons from any standard manual, such as Ross, The New Rational, Fritz-Eldridge, and others.

Copying: Plain simple matter.

Supervision: All work supervised.

The Goal: Technique, accuracy and skill in execution.

## Second Year

## First Semester:

Transcription of plain dictation, 20 to 30 words per minute.

Transcription of plain copy, 20 to 30 words per minute.

Machine dictation, 15 to 20 words per minute.

Rough draft, 15 words per minute, (depending upon the character of the copy).

Form letters, review drill exercises, etc.

## Second Semester:

Transcription of new matter of business letters, 35 to 55 words per minute.

Machine dictation, 20 to 50 words per minute.

Rough draft, 20 to 25 words per minute.

(depending upon the character of the copy).

Legal Instruments.

Tabulating, Bills and Statements.

Manifolding.

Stencil Cutting.

Office Training.

## Grading and Credits for Typewriting

We suggest that a minimum grade for graduation of 70% be established.

The work of the first year should be of such a character that promotion to the second year's work would not be questioned.

The following is a suggestion for credits the second year:

First Semester		Second Semester	
30 words per minute.....	70%	35 words per minute.....	70%
35 words per minute.....	75	40 words per minute.....	75
40 words per minute.....	80	45 words per minute.....	80
45 words per minute.....	85	50 words per minute.....	85
50 words per minute.....	90	55 words per minute.....	90

After the reading of the syllabi was completed Mr. Pelton opened the discussion and was followed by Misses Van der Veen of Joliet, Vogel of Quincy, Sells of Illinois, and Messrs. Rogers of Waukegan, Welper of Herrin, Keys of Kankakee, Larson of Oak Park, Prof. Litman of the University, McAfee of Lincoln, and Irish of Galesburg. The latter made the motion for adoption which was carried.

In the discussion it was shown that the aim was to bring the high school and University into closer relations through an understanding and use of standards, and that these standards were not to be imposed

upon either, but that they were to be suggestive and of great assistance especially to the high school teacher rather than binding him to a rigid plan. Some questions of interpretation, arrangements, omissions and the giving of credits were brought up for consideration but the report was adopted without alteration as submitted.

Mr. Pelton here resumed the chair which had been occupied by Dean Weston during the reading of the Syllabi. The question of next year's program was first considered. A number of topics were suggested and on the motion of Mr. Keys of Kankakee, it was voted to select two as a tentative program, as follows:

1. Vocational Guidance, which was suggested by Mr. Finney.
2. Business Organization, suggested by Mr. Larson.

In the election of officers, Mr. Pelton was elected for a term of two years to fill the vacancy left by the removal of Mr. Loring from Danville to the Western State Normal of Kalamazoo, Michigan. Miss Barrett of Centralia was elected to the place of Miss Cora Pryor of Bloomington, whose term expires and who has removed to California.

On the motion of Mr. Larson, a vote of thanks was extended to Dean Marshall for his inspiring address.

The meeting then was adjourned in the usual order.

#### COUNTY SUPERINTENDENTS' AND VILLAGE PRINCIPALS' SECTION

The meeting was called to order by County Superintendent Ben L. Smith, chairman.

County Superintendent S. D. Faris, of Hancock County, was appointed Secretary.

County Superintendent Wm. A. Hough, of St. Clair County, was elected member of the Executive Committee.

A paper, "The Illinois Compulsory Attendance School Law", was presented by County Superintendent O. P. Haworth, Danville, Ill.

Discussion—By Ben L. Smith, B. C. Moore, R. C. Moore and C. H. Watts.

A paper, "Needed Changes in Township High School Act and High School Privileges Act", was presented by County Superintendent E. H. Lukenbill, Lincoln, Ill.

General Discussion.

A paper, "The Work of the Small High School", was presented by John Calvin Hanna, State Supervisor of High Schools.

Adjournment.



Following are the three papers in the order of their presentation :

# ILLINOIS COMPULSORY ATTENDANCE SCHOOL LAW

By Otis P. Haworth, Danville

Illinois has one of the best compulsory attendance laws of any state in the Union. I do not consider it necessary to enter into a history of the development of this law in this paper but rather to discuss the manner in which it may be improved and enforced.

The law is too limited in its scope. While it intends to keep the children in school until they are sixteen years of age, there is a provision in it that practically excuses all children after fourteen years of age. This might be remedied in this next session of the legislature.

We have found the law exceedingly weak in the provision for its enforcement. It provides that every district shall appoint a truant officer whose duty it shall be to look after the trancies and prosecute such persons as shall not keep their children in school.

Our experience in Vermilion County for the first three years of our administration was very unsatisfactory. The truant officers, except in the cities, did nothing but draw their salaries. It is not surprising that this should be so because in the small village and rural districts the neighborly spirit is much greater than in the cities and men resent the assuming of authority, legally or otherwise, of their neighbors over them. A prosecution brought by a neighbor arouses a spirit of enmity that is never overcome. These people attend the same church, the same social gatherings, are in the same threshing ring, oftentimes have the same line fences. They must live out their natural lives and die as neighbors, and it is no great wonder that the country school district truant officer will not prosecute his neighbor.

It was soon realized in this county that the law was inadequate in this respect, so a system was created that would more nearly secure the result intended by the law and this is the plan. All teachers except those in the cities are notified to send the names of the parents whose children are irregular in attendance to the office of the County Superintendent of Schools. They are cautioned to investigate carefully and not to send names when the absence is excusable. When the bi-monthly report is made the number of days' attendance of each child is given for the two months and remarks as to the absences. These reports are examined carefully and if any child has been absent without an excuse the teacher is written to investigate and send the name of parent if the absence was without cause. The parents of all the children in these cases are then mailed the following letter and the teacher is notified again as in the second letter :

Form (a)

Danville, Ill.

I have been informed that you have a child between the ages of seven and fourteen that is not attending school regularly. Section 274 of the school law provides that for every offence or neglect of this duty the person offending shall be fined not less than five dollars nor more than twenty dollars and cost of suit, and shall stand committed until the fine is paid.

The law does not provide that you shall be warned before prosecution, but we are doing this as a personal favor to you. Unless the child is sent to school at once and kept in school regularly, we shall proceed to prosecute according to law.

Very respectfully,  
Otis P. Haworth.

## Form (b)

We have mailed the parents or guardians of ..... a letter warning them to keep their children in school regularly. Please report to this office at once if they do not comply with this request.

Very respectfully,  
Otis P. Haworth.

If the teacher again notifies the County Superintendent, a warrant is sworn out before a justice of the peace and the parent is brought to trial. The County Superintendent signs the warrant as the complainant.

While the law does not make it the duty of the County Superintendent to do this, he is responsible for the success of the schools in his county and any failure of the schools because of the lack of enforcement of the school laws is his failure so far as it is possible for him to prevent it.

The total number of days' attendance of Vermilion County in four years of the truant officer régime is as follows:

1909.....	2,027,873
1910.....	1,942,486
1911.....	2,016,938
1912.....	2,082,027
1913.....	2,185,708

This shows a gain in the four years of 157,835.

The total number of days' attendance of Vermilion County in three years of the new plan is as follows:

1913.....	2,185,708
1914.....	2,158,944
1915.....	2,421,462
1916.....	2,622,486

This shows a gain in three years of 436,778. It can be seen by the statistics that the new system did not become effective for a year after it was started. Parents could not realize until after many prosecutions that we meant for them to obey the law. Very little attention at first was paid to the letters sent to them whereas now we either hear from them or they appear in person the following day. Much publicity was given to the prosecutions in the county papers thus calling attention to the fact that the law was being enforced.

Many of the prosecutions are necessarily pitiful because of the poverty of the offenders. Their poverty is usually pleaded as an excuse for their offense. They need the help of their children. The state however looks at it differently. The very existence of a republican form of government depends upon an intelligent and educated citizenship. If parents cannot support their children the state provides for them. If they cannot buy books the school district will buy them. We cannot afford to let false sentiment interfere with the welfare of the child as well as the welfare of the state.

No one would consider for a minute the dismissal of a prosecution of a chicken thief. Yet he who steals a child's education and his chance in life is infinitely worse than a chicken thief and should not escape upon the pleading of his poverty. How then can we make our compulsory attendance law better and how better enforce it? First, it can be made better by extending the age to sixteen at least, if not eighteen. Second, by making it the duty of the County Superintendent to enforce the law.

Some there are who advocate a county truant officer. This is not necessary and it would weaken the law because it would divide the responsibility of the county administration of the schools.

The County Superintendent succeeds or fails as the schools are a success or a failure. The attendance is a vital essential in this success. Then let the County Superintendent have the responsibility. If an officer is needed and I believe he is, let him be the appointee of the County Superintendent, a part of his official family subject to his orders and under his direction. This system has been tried in a few of the counties in the state and flattering reports come from all of them. With a law realizing this method and providing funds for carrying out the plan a great increase will come in the days' attendance in the schools.

## NEEDED CHANGES IN THE TOWNSHIP HIGH SCHOOL ACT AND THE HIGH SCHOOL

### PRIVILEGES ACT

By E. H. Lukenbill, Lincoln

Since the establishment of the English Classical High School in Boston, in 1821, there has been a marvelous development in the field of secondary education in the United States. The effort that has been made in many communities to give the youth an opportunity to attend a high school is one of the great achievements of the century. The principle of democratic equality of educational opportunity is recognized as never before. The importance and necessity of providing secondary education as a means of training the boys and girls for efficient service in the community and the development of the proper citizens of tomorrow are beginning to be realized by the mass of the people. Communities in which the majority of the people are opposed to the establishment of high schools are becoming fewer. It is surely a violation of the principle of democracy to deny high school privileges to any student because of circumstances over which as an individual he has no control. There are at the present time vast areas, including whole states, where free secondary education is within reach of only a very small fraction of the boys and girls that are eligible. The greater percent of the pupils in such cases who are denied this privilege live in rural districts where leadership is most needed. This unhappy condition remains to be changed by legislation. Statistics, however, show that rapid progress has been made in secondary education. The increase in the value of high school property and current expenditures indicate the willingness of the American people to tax themselves for educational purposes. A recent report of the commissioner of education shows a remarkable growth of high schools in the last 21 years in the United States. In the year 1889-90 there were 2,526 high schools with 9,120 teachers and 202,963 students. For the term of 1910-11 there were 10,234 high schools, employing 45,167 teachers and instructing 984,677 students. The increase in attendance at 12 high schools in Illinois in the past 7 years ranges from 19% or 20% to as high as 60%.

No question concerning the public school system of Illinois in recent years has been more commonly discussed or elicited more interest than that of free high school privileges. The consensus of opinion is that it is the inalienable right of all the children of the state to have as far as possible equal high school advantages and privileges. The rural boys and girls are entitled to equal educational advantages with those of the more fortunate city children. The high school is not now considered the school for the exceptional few but the common school for all the children of every class. It is a part of our common school system, a continuation, so to speak, of the elementary course and may well be referred to as the 9th, 10th, 11th and 12th grades. If it is true that the high school is only a part of the public common school for all of the people, it is imperative that provision be made to provide equal high school privileges for both rural and city children. The earlier the people as a whole realize and the sooner it is inculcated in the mind of the child that a promotion from the 8th to the 9th grade is no greater change than from the 7th to the 8th



grade, the better it will be for the schools and the child. The feeling that the high school is only a part of the common school is becoming universal as is evidenced by the rapid growth of high schools. The high school movement in Illinois in the last seven years has made most rapid progress.

The great influx of students indicates that the high schools are offering instruction that not only meets the needs of the child to a reasonable degree but also makes an appeal to his interest and that there is a common belief in the importance of training beyond the first eight grades. The large investment of capital and the astonishing increase in attendance in the high schools of the state during recent years have been accomplished through two chief agencies: first, the influence of all the educational forces of the state for better education; and second, progressive educational legislation. No other factor has done more to promote the high school movement in this state than the laws authorizing the establishment of township and community high schools and the act granting to pupils of non-high school territory free tuition privileges.

The 1913 and 1915 tuition laws were unsatisfactory, but who can say that they have not helped to increase the interest in high school training and make the demand so great for secondary training that better advantages will inevitably result? We must not become discouraged but increase our devotion to the cause which we represent, the best interests of the coming generation. The failure of these laws should and will be only a stepping stone. A demand has been created. A new law must be enacted that will meet the needs.

Under the administration of the 1911 township and community high school law much progress has been made. Yet it is a fact that the law is defective and the entire high school situation far from satisfactory. Under the present law a community organizing a high school district has the right to determine the boundary of such district. In many cases territory is included at such a distance from the site of the school established that the school can not serve efficiently all the people who are taxed for its support. The size of the district should be limited and there should be some means of adjusting the boundaries so that no district may infringe upon the rights of its neighboring districts and all children within its boundary may have access to the benefits of the school with a maximum convenience. On the other hand, it should be large enough to raise sufficient funds for its maintenance at a normal tax rate.

Pupils residing in non-high school territory should have free high school tuition privileges and the burden rest upon such territory.

No remedy for the entire high school situation seems more feasible to me than to divide the entire state into high-school districts. Each district shall elect a high school board of education. The district shall reserve the right to determine by popular vote the proposition to establish a high school within such district. The high school board of education shall maintain and manage the high school. If a high school exists in the district when it is organized such high school shall be subject to the control of the high school board of education elected for such organized district. If no high school is established in the district, the board of education shall pay the tuition of all pupils residing in such district who are graduates of the eighth grade and attend a high school in another district. The parent or guardian shall select the school to be attended subject to the consent of the high school board of education of the district in which the pupil resides and the high school board of education of the district in which the pupil attends high school and the approval of the county superintendent. The board of education of the school attended shall fix the rate of tuition which shall not exceed the per capita cost of maintenance.

The board of education shall have power to levy a tax to erect a suitable building or buildings, to procure furniture and apparatus and pay the necessary current expenses of maintaining the school in every district in which a majority of the qualified voters have decided at an election held in accordance with the law to establish a high school. If a high school is not established in the dis-

trict the board of education shall have power to levy a tax for the purpose of paying the tuition of eligible pupils who attend high school in another district.

There should be created a high school board of education in every county whose duty it should be to adjust the boundaries of the high-school districts. It should be vested with authority to correct any errors in the distribution of high school territory and to equalize the sizes of the high-school districts of the county.

In laying out these districts the greatest care should be exercised so that the boundary of each will coincide with that of the community. No rural district should be divided. The school when established should be located at a place in the district where all interests of the community converge.

With a law of this kind it would be advisable to go further and include some very important duties for the high school board of education of each district and county. If legislation is not enacted authorizing some county officer, say State's Attorney, to enforce the compulsory attendance law or creating a county truant officer, it should be made the duty of the high-school board of education of the county to appoint one of its members to act in this capacity. The duties should be so specified that there will be no doubt as to the enforcement of the law. This could be included in a good high school bill and probably passed.

Our schools cannot be efficient institutions unless they be well financed. A school cannot render its best service, no matter how able its instructors and efficient its supervisors may be, if it is cramped for want of funds. In order that it may prepare each individual child for life-work and to live efficiently in the community, the public school system must be placed on a firm financial basis. To meet the new demands being made upon the schools and the new possibilities in education which are awakening there must be constantly increasing funds. As long as the state enforces compulsory attendance it assumes the responsibility of maintaining schools that train for citizenship even though they demand increasing expenditures. With the amount of money raised by taxation for school purposes constantly increasing, it is evident that the greatest care should be taken to equalize this burden.

It is perfectly clear that Illinois should equalize the burden of taxation as well as educational opportunities. Part of the cost of conducting the public schools is raised by a State tax. It should be increased as it helps to equalize the rate of taxation. The fight should be waged until the 2 mill tax is restored. About nine-tenths of the cost of maintaining the public schools is secured by local district taxation. The size and valuation of the districts differ greatly thus causing great inequalities. Not taking into consideration the less fertile portions of the state, we find even in this section with land of practically equal value great differences of tax rates in neighboring districts. This is caused mainly by the difference in size of the districts. Probably a railroad, electric line or mining corporation has property in one district subject to taxation which pays a large part of the tax for the support of the school, while in a neighboring district no such property exists and as a result the tax rate is double that in the former district, and both have practically the same current expenditures. This is unfair to the latter district. It is even more unfair for a district to escape for two years a school levy or tax almost entirely because it happens to have no school, due to the fact of small attendance. The people of such a district are equally responsible for the support of the schools of the state. Such a condition could not occur if a large part of the cost of conducting the rural schools of the high-school district were raised by a general tax upon the entire property of the larger political unit, the high-school district. This we know to be of minor importance but nevertheless it reflects a feature of the inequality of the present system of taxation under conditions that frequently arise. We are all aware of these inequalities.

A very important power could, therefore, be conferred upon the high-school board of education by granting it the power to levy a uniform rate of

tax upon all the taxable property of the high-school district with which to pay the minimum wage of every elementary teacher in the high-school district. This minimum wage should be determined by investigation before it is included in a bill. It should be an amount sufficient to insure a living wage for the teacher and support those dependent upon her and make it possible for her to meet the many obligations incurred in a professional way. We will say, for instance, that the investigation reveals that the minimum wage in this section should be \$400 per annum, then a high-school board of education having 6 elementary teachers, rural or city, should levy a tax of \$2,400 in addition to the tax for high school purposes with which to pay the minimum wage of every elementary teacher of the district. The district board would reserve the right to determine the amount in excess of the minimum wage that it would pay the teacher or teachers of the elementary school of the district. By enlarging the taxing unit it would help to a considerable degree to equalize the rate of taxation in the several districts of the high-school district, and one of the best features of the district system, that of offering a premium to the successful teacher, would be retained. Railroads or other corporations owning property in the high-school district would help to support the schools of the larger unit. Funds which would meet the needs of the several schools could be raised by a more uniform rate of tax.

In conclusion I will say that the best solution for the entire high-school problem as I understand the situation is to divide the entire state into high-school districts, create a high-school board of education for each district and county, and confer such powers and duties upon these boards as will aid in the equalization of taxation and high school opportunities and further the cause of education of the state.

#### THE WORK OF THE SMALL HIGH SCHOOL

By J. Calvin Hanna, Springfield

In any useful consideration of the work of the small high school the following probably are questions pressing most for a settlement: 1st. Is there much of it in the state—much of the work of small high schools? Is this really a considerable matter or is it of minor importance? 2nd. Should the program of studies in a four year small town or village high school, or in a rural community, be the same as in a city high school? If there should be differences, then in what particulars and to what degree and why? If there should be constant elements that must be preserved and maintained in every high school, whether large or small, whether in a city or in a village, what should these constant elements be and how maintained as constants? 3rd. Is the work of the small high school well or ill done? Are the youth of the villages and rural communities well or poorly taken care of by the state in this respect as compared with those of the cities? If such comparison shows a marked inferiority in small high schools, then what are the causes for such inferiority? What are the consequences? What is the cure?

Let us take the first of these questions. Is the small high school of large importance numerically in the state of Illinois, or are they so few in numbers and so meager in enrollment as to make the problem almost a negligible one? First, as to their number. The Illinois School Directory for the current year, soon to appear, will contain the names of 941 communities maintaining high schools, or rather of 941 high schools so maintained, Chicago has 22 of them and Peoria has 2; all other communities that have any high school have one each. Now how many of these 941 high schools are small high schools? The definition of a small high school might be difficult for us to agree upon. Perhaps for purposes of convenience in our discussion we might agree that any high school with an enrollment of less than 100 pupils is a small high school. The average enrollment of the 12,000 high schools in the whole of the United States is about 100. Most schools with an enrollment less than 100 are taught



by the principal and two assistants, or by the principal and one assistant, or by the principal without assistance. Such schools may very reasonably be called *small high schools*. Now how many are there? The answer is 771; that is, 82 per cent of the whole number of high schools. Four-fifths of all the high schools in the state have less than one hundred pupils apiece. Only one-fifth—only 140 schools—have as large an enrollment as 100.

When you and I listen to interesting and able arguments as to whether there should be separate laboratories for physics and chemistry and botany and physical geography and zoology and physiology, or whether any two of these may be united for work in one laboratory; or when we hear acrimonious discussions as to whether it is wise for the same teacher to combine any other work with work in domestic science or in Latin, we know that the champions of either side are talking about "large" high schools, about schools that have at least 100 and probably 200 or more pupils. There are not more than about eighty high schools in the whole state that have an enrollment of 200. There are 600 high schools in Illinois that have less than 50 pupils each. There are over 300 with less than 20 pupils each. Thus you see, when we are talking about the work of the small high schools of the state, we are talking about the work in the overwhelming majority of all the high schools of the state.

But the enrollment—how does that count up? The total enrollment in the whole 941 high schools of the state this year is 112,786. A little more than 25 per cent of this enrollment is in schools having less than 100 pupils. Between four thousand and five thousand of these pupils are scattered among the three hundred little schools having each less than twenty enrolled. Nine or ten thousand more are in schools between twenty and fifty in enrollment. Here we have it in a nut-shell. One-fourth of all the high school boys and girls, a total of about 28,000 of the youth, are directly concerned in anything that touches the small high school. These questions concern four-fifths of all the high schools of the state. Our topic is then a most important one.

Let us notice another phase of this matter. Out of the whole 941 high schools of the state about half are four year high schools. All the rest offer less than a full four year course. Of this other half—those that might be called "incomplete" high schools—something like 75 or 80 are offering three years' work; considerably more than 300 are offering two years' work. A few, thirty or forty in all, report themselves as doing one year of high school work. Putting it into percentages, we have 51 per cent offering four years, 8 per cent offering three years, 36 per cent offering two years, and 5 per cent only one year.

Perhaps you may be interested to know how many of these are classed as "recognized" high schools, conforming either to the standards for regular recognition or to the standards for probationary recognition. Of the four year high schools about 90 per cent have either regular or probationary recognition. Perhaps one-third or one-half of the other ten per cent could secure it by a little effort. Of the three year high schools about 60 per cent have either regular or probationary recognition. Most of the rest are below standard and ought not to attempt more than two years' work. Of the two year high schools about 32 per cent have either regular or probationary recognition. A considerable number of the others could, by a little effort, secure recognition. None of those offering one year of high school work have or can secure a certificate of recognition without a change in organization.

Let us look at this matter from another angle. There are more than 750 high schools in Illinois, four-fifths of the whole number, in which all the pupils in any one of the four high school grades can be taken care of in one section or recitation class. This means that in all these schools there are never more than sixteen classes reciting in a whole day's schedule. This number—sixteen—would be the maximum number of recitations possible in a fully organized four year high school without electives. But this group of 771 small high schools includes also all the three year schools—75 or 80 in number; in these there is never more than one high school assistant and there are conducted daily from

10 to 12 recitations. It also includes all the two year high schools—about 345 in number—in nearly all of which all of the high school work is done by the principal alone, and in which not more than eight recitations (not more than six or seven in a recognized high school) are conducted daily. It also includes of course the forty schools offering but one year of high school work.

Thus it will appear that in about 400 of the high schools all the work attempted is done by one teacher—the principal. In perhaps 175 of them, the high school work is all done by two teachers, i.e., the principal and one assistant. The remainder of the 771 “small” high schools—say 200 of them or less—offer four years of work, all of which is done by the principal and his two high school assistants. Sometimes the head of the school is called the superintendent—having several teachers in the lower grades—and one of his high school assistants has the office of principal.

These figures serve to help us realize that for most high schools and most communities in Illinois the problems which face them are *the problems of the small high school*. These are examples of those problems: 1. How to maintain a high school with a *sufficient corps of teachers* without making the school top heavy. 2. How to find *room* for the required number of teachers to conduct their classes separately. 3. How to find space and equipment for the *laboratory practice* needed in science courses. 4. How to meet the limited resources for the modern and growing demand for *vocational and prevocational* studies that call for more rooms, special equipment and specially trained teachers. 5. How to raise enough money on a very limited equalized assessed valuation of taxable property in a small district and under the legal limitation to equip the school for a *proper variety of instruction* adapted to modern needs and supplied by properly trained teachers, in all the departments through the ten or eleven or twelve grades. These are serious and important problems and they are in many districts—in hundreds of districts—very difficult, and sometimes seemingly impossible of solution.

There are many—yes, there are ten thousand school districts, five-sixths of the whole territory of Illinois—where it is impossible for any boy or girl to have a high school education without going away from home. If he goes away from home, he or some one for him must pay for his tuition, costing from \$12 to \$100 a year, besides the expense of transportation and meals and the disadvantages of other sorts that spring from sending boys and girls in their early teens away from home. Then, as we have seen, there are nearly a thousand more districts which are obliged to strain every nerve to keep up the expense of maintaining a high school—one year, two years, three years or four years—with the very limited resources at their command.

A fair estimate of the minimum annual cost of maintaining a regularly recognized four year high school with a superintendent and two assistants and at the same time maintaining the eight lower grades (with four grade teachers) is about as follows:

Salaries, superintendent and six teachers.....	\$4600
Other expenses .....	1400
Total .....	\$6000

This means a necessary valuation of \$400,000. For a school with *probationary* recognition—four years—this may possibly be reduced to \$4000 annually and a valuation of \$226,000.

A regularly recognized three year high school may be conducted for the eleven grades at an annual cost of \$5000—indicating a valuation of \$333,000. A three year school with probationary recognition can be conducted for \$3000—on a valuation of \$200,000. An estimate for a two year high school—regular recognition and ten grades—would be \$4000 a year and a valuation of \$266,000. With probationary recognition it could be done for \$2400—a valuation of \$160,-

000. These figures are general estimates. Any considerable income from tuition or from the state distributive fund would somewhat relieve the situation financially. Now this means that a recognized high school—even with probationary recognition and for only two years' work—and with a close estimate, ought not to be attempted in a district with a valuation below \$100,000.

It has been shown by the records in the State Superintendent's office that the average equalized assessed valuation of taxable property in the rural school districts of this state is not far from \$50,000. Of course, this means, as said above, that in at least ten thousand school districts the boys and girls must do without high school education or must go away from home and pay tuition (unless they are so fortunate as to live within a real township high school district.) These deficiencies and disadvantages are serious ones and they ought to be faced by the State of Illinois and ought to be remedied by wise legislation and by devoted and united public spirit.

The program of high school studies in different communities may vary with advantage. The selection of studies and the manner of teaching in these studies should of course be adapted to the life and activities of the community. As has been many times pointed out so clearly and emphasized so eloquently, it is criminal to allow schools to be conducted in a rural community without any recognition of the great agricultural problems and activities that absorb the attention and determine the life of all in that community, old and young, outside of the school room.

The same thing is true concerning the life of any community and the work of the high school in that community. The problems of making a living should be easier for the youth in his teens through his high school education, and further, he should be trained to live well in his community. But this is not all. Every boy and girl in every community, whether agricultural or manufacturing or commercial or miscellaneous, is to become a man or woman, God willing, and a citizen of this great self-governing nation. He is a real part of the human race, and an heir to all its precious achievements, and he has a right to such training as will fit him for bearing the responsibilities and enjoying the privileges of that citizenship, and for appreciating, enjoying and utilizing in his life those heritages of the race that are embodied in the history, the arts, the sciences, the literature, the laws and institutions of that race. Therefore, our program of studies in the small high school must be made practical, adapted to the environment; but it must be made rich and full and stimulating and neither dwarfing nor one-sided. Some elements must be constant for the sons and daughters of all American citizens, if America is to endure. This is too large a topic for the limit of time and might be well taken up in a separate discussion.

Let us come to the third inquiry. Is this work in small high schools well done or poorly done as compared with the larger schools? The answer made in all fairness is that it is poorly done. There are many and cheering exceptions. Here and there we find a devoted and skillful principal—hammering along for \$75 to \$90 a month, and worth twice that money. Here and there is a gem of a teacher—born so—who only needs discovering. Here and there is a small school with a fine spirit of loyalty to high ideals among the pupils—due often to the splendid influence of one or two or three teachers. Here and there we find a small community thoroughly roused to the vital importance of developing and maintaining a high grade high school.

These are fine things and no one has been more impressed by them than myself, discovering them in traveling over the state. But it is no unkindness to say that these gratifying conditions found here and there are developed in spite of the serious handicap that rests upon the small high school in the small school district in the village or rural community. For there is a handicap and a very real one and one that is always hard to overcome even where there is a bright and able principal, where there are hard working teachers, where there is a devoted school-board, where there is an awakened and united community.



Much can be done by loyalty and zeal and harmony.

The difficulties of the small high school—and they are numerous and great—are due to the fact that it *is* a small high school. "No," says one, "it is merely a question of the teacher." "I have seen splendid results," says some one, "in little schools achieved by a devoted and skillful teacher with wonderful power of getting results—just as good results as in the big high schools." So have I—a few cases—but I will ask one question. "What if that rare teacher had had a few advantages of room and equipment and better organization and larger classes?" Would her task have been easier or more difficult? Would the results even perhaps have been better?

Let us get right down to business in this. If you as a superintendent or a school board member were seeking a good man or woman to reorganize your school which had run down at the heels for two or three years, would you prefer to go forth with six hundred dollars or with a thousand dollars in your hand to offer to such a one? Would either of these amounts be as likely to secure the right person, able to restore order and discipline, arrange a sound course of study, select the best text books, encourage and aid young teachers, develop a spirit of loyalty and willingness among pupils and inspire the whole community to confidence and pride in their school, as could be secured if you had even \$1200 to offer? You know the answer. More money can secure better teachers and this is right.

The districts are too small—the schools themselves are too small for the right kind of organizations and the right kind of class work and the right chance to develop the spirit of the school. The districts are too small to raise a sufficient amount of money in order to secure the kind of teachers you want and the equipment which they need. The development of the public high school is a later development in America than the development of the public elementary school. This chronological order of the development of these two departments of education may have seemed to us perfectly natural and proper. And we may have assumed that it is the universal order of development.

The history of education shows however that this is not true. The experience of the United States in this matter is contrary to the experience of the race. A study of primitive races as they are in the world discovers as a school phenomenon without exception the development of organized secondary education everywhere and the development of organized elementary education nowhere. Secondary education from time immemorial in all races and in the most conditions has been organized for the purpose of taking the rising generation coming into the period of youth and training them for the responsibilities of membership in the community.

Elementary education was organized long afterward when in the slow progress of the race, the accumulated wisdom of the race grew beyond the limits of oral tradition and when man was driven to the invention of written language, and when little children had to be organized into schools to be taught written language and so to prepare them for doing the work with written record in the groups organized for secondary education. This is the history of all mankind and the interval may have been a thousand years. But America reversed this order in the evolution of its public school system. The sudden demand made upon an invading army of immigration coming as it did from highly civilized nations and taking possession of an empty land with vast natural resources crying aloud to the white man for development absorbed this people for a time in empire building, in its material sense and when the growing and alarming increase of ignorance among the young roused the American people to the necessity, first, for establishing public elementary schools, and then, say two generations later, in the last quarter of the nineteenth century to the necessity for public secondary education. But when this second rousing occurred, the school districts were already made and they had all been made to suit the convenience of little children and were accommodated to the distances which could be covered daily by them in attendance on the schools.

This governing principle or influence made districts of four or five square miles, about 2,500 to 3,000 acres. The average valuation of this land—referring only to farm land—as equalized for taxing purposes, is about \$20.00 an acre, amounting, as said elsewhere, to \$50,000 for a district. Of course, everybody knows that is not anywhere near the actual market value of the land, nor is it anywhere near the one-third of actual value which the law calls for. It is, one may guess, not more than one-half of one-third of the actual value. Such a plan of assessment, prevailing generally, tends to keep taxes down, which may seem to be a most beneficent result. But as a consequence, it tends equally to keep *schools* down. An income of even \$750.00 a year—which is the maximum legal levy for the average rural district—does not purchase a great deal in the market of education and does not include a high school.

We have noted the deficiency. We have pointed out the chief cause. Let us reflect a little on the consequences. They are almost beyond calculation. One might discourse for a week on this topic. Suffice it to say that one of the consequences is that the sons and daughters of the original stock that turned the wilderness into an empire, that established America and its ideals and its institutions are very largely excluded from the advantages of secondary education that are poured forth lavishly in the more populous centers for all the children of the people—and especially should we observe the millions of the children of the later immigration, that vast new material that has choked the entrant highways and that has raised serious problems as to whether the ideals of the nation are to abide, all these have abundant and splendid advantages which because of our backward and outgrown educational machinery, are denied or seriously abridged to the grandchildren of the pioneers who happen to dwell in rural and village communities.

What is the cure? Well, we can not easily raise that legal limit of levy for educational purposes, though many a small community would be glad to do so. By our laws it requires a community of 1000 people to be wise enough to determine for themselves that they will use two per cent for current expenses, leaving one per cent for building purposes. And probably we can not easily change the system of assessing whereby "actual value" is divided by two without any law and then divided by three according to law. There is one answer to the conundrum and that is to provide larger taxing units for school purposes. The need of such a reform is almost universally recognized. The state has attempted to make this provision in several ways. Two or more districts may legally unite into one and in hundreds of cases all the children of both or all the districts could be taken care of better by one good teacher than they are now taken care of by two or three.

In one county my attention was called lately to a group of thirteen school districts all within the boundaries of two townships, whose total enrollment was 150 pupils. With a good central school, four teachers could take care of those pupils for eight grades of work, and the saving thus effected would secure teachers worth somewhat better salaries and would make it possible to run a recognized two year high school with no increase in the tax rate. The transportation problem for a consolidated school of all grades is successfully taken care of in several of our neighbor states, and Illinois ought to learn how from her younger sisters. The township high school laws—both that of 1909 and that of 1911—were intended to meet this need and remedy these deficiencies and through these it was made possible for many thousands in villages and in rural communities to secure the advantages which otherwise they could not have and which every city child has if he wishes it, in a strong high school. The latter of these laws has been set aside by the supreme court, but we must all believe that some means shall be found whereby something equally as serviceable shall be provided.

Meanwhile it is worth remembering that there were sixty or seventy township high schools in successful operation before the 1911 law was passed under the older township high school law which is still in force and under which many

of those movements for township high schools that never were carried far enough even to come under the kindly clause as to *de facto* districts, could just as well have been organized and put into operation under the old law and if that *had* been done they would have been untouched by this decision.

The setting aside of the tuition privileges act of 1915, leaves unrepealed the law of 1913 requiring the home district to pay the high school tuition and this will help, in many instances, to save the thousands of boys and girls attending schools away from home from losing their opportunity. Other thousands in the future no doubt will be thrown out because of the poverty of their home districts. Undoubtedly some effort will be made in the approaching session of the legislature to present and pass a bill which shall meet these crying needs and which shall be free from the faults of those that are set aside.

Surely it behooves all of us who are directly interested in this, the problem of the small high school, the problem of the boys and girls, to unite for the securing of such legislation, working *together* in mutual sacrifice and cooperation through legislation to get the matter taken care of wisely rather than working against one another in an effort through court decisions to throw out any law even though it be not perfect, reserving our efforts to correct imperfect laws if possible by legislation. When the school men disagree and allow their differences to interfere with united intelligent propositions to the law making body, we can not severely criticize legislators who hesitate to adopt any new plans if the experts disagree. Reforms from within are safe and lasting. Reforms from without are often destructive.

#### DOMESTIC SCIENCE SECTION

The section was called to order by the Chairman, Miss Isabel Bevier, who welcomed the section to the conference and made some announcements.

A nominating committee consisting of Miss Alice Treganza of Bloomington, Chairman; Miss Jessie Edmundson of Kankakee; and Miss Matilda Voss of Champaign, was appointed to nominate persons to fill vacancies of the Executive Committee.

The report of the Executive Committee was then presented by Miss Florence Harrison and was as follows:

#### REPORT OF THE EXECUTIVE COMMITTEE OF THE DOMESTIC SCIENCE SECTION OF THE HIGH SCHOOL CONFERENCE, 1916

Florence Harrison

There have been no meetings of the Executive Committee this year. The suggestions made at the last conference for the work of the present year were these: continuation of the study of fundamentals and accessories of the home course; the most effective methods of teaching the various subjects and the consideration of means of correlating the art and clothing work.

The work of the Committee on the Home Course was not very successful. Very few responses were received from those who were given outlines last year. A few of the suggestions received are of value. One teacher had each girl make a plan for a modest home with a color scheme with suitable decorations for each room. Samples of suitable wall paper, rugs, and furniture for these were obtained from catalogs and magazines. The art teacher gave one hour a week to the class taking up such problems as color harmonies as applied to the selection of wall paper, curtains, draperies, rugs, etc., as well as the selec-



tion of suitable china and furniture. This year the teacher hopes that time will be given the manual training teacher so that he can instruct the class concerning the variety of woods, their suitability for furnishing of particular rooms; the styles of furniture, etc., as well as the methods of cleaning, polishing and finishing. The course as worked out was a very valuable one to the girls. It was suggested that in this time of high prices when everyone is vitally interested in the economic problem, the subject, "Buying", now listed as an accessory should be given a place of importance among the fundamentals.

Other suggestions give some of the subjects now listed under accessories as fundamental. These are as follows: The study of fuels and management of fires; Collecting samples of papers and other materials suitable for wall coverings; Trips to stores and factories; Practice in selecting and combining samples of wood and wall coverings; Study of period furniture; Cleaning of glass and metals, woodwork and refrigerators; Agents for softening water; Making javelle water; Washing and ironing; Study of the home nurse, her characteristics and duties, care of herself, emergencies, treatment for fainting, wounds, burns, drowning, suffocation, poisons, classes and treatment; Buying in quantity and storage. In analyzing these suggestions, we find the teacher's idea of fundamental depends upon the community, equipment and the time allotted to her work. For example, the trips to stores and factories and the collection of samples of materials can be carried out in larger communities, but are not possible in the smaller places. The facilities for laundry work might make one consider washing, ironing, making javelle water and the study of agents for softening water as fundamental.

In selecting subject matter, it is necessary to ask one's self the following questions: Is it of use to the child in solving problems of daily living and situations in life? Does he need it? Does it help him to his place in society as an educated individual? Does it form the basis for a later knowledge? Some theory work is necessary to the organization of knowledge; is this? Does the subject matter selected help one to an appreciation to better things? If your subject matter has any of these values then it has a place in your course.

It is the hope of the committee to further this study of fundamentals and accessories; to take up the study of the methods used in the correlation of art with clothing work, and to collect suggestions concerning the teaching of various subjects. It is the wish of the committee that a reform or reversal in the present situation will take place and that this following year it shall be deluged with suggestions and help from you as teachers. Begin to-day to state your problems and give suggestions how this committee can best serve you. It is anxious for your help and cooperation.

Miss Jessie Edmundson, formerly of the Deerfield-Shields Township High School, next presented the Standardization of the Work in the Grades. Her paper, in part, was as follows:

#### STANDARDIZATION OF WORK IN THE GRADES

The need of standardization and correlation of High School and Grades was very keenly felt in the Deerfield-Shields Township High School. The need seemed also to have been felt by the grades as subsequent events proved. The only attempt at standardization until last year was the entrance requirements of the High School. An attempt was made to bring together the representatives of the high school and grammar school faculties who should be working together. Committees were appointed in various departments. A committee on Domestic Science consisting of Miss Tucker, Miss Edmundson of the Deerfield-Shields High School, Mrs. Freeman of Ravina Grade schools and the teacher of sewing in the Elm Place School was appointed. This committee had several meetings. They discovered that cooking was not taught in the grade schools of the two townships. Sewing was taught in both Highland Park and Lake Forest. Two schools had special sewing teachers. The largest amount of time devoted to

sewing in any school was eighty minutes per week. In the country schools some sewing was taught, but in a desultory fashion.

The report as adopted is as follows:

### Report of the Committee on Domestic Science

The Domestic Science Committee suggest the adoption of the outline published as a result of the report by the committee of the Domestic Science section of the High School conference in Urbana, 1914.

There were a few changes suggested that have been indicated in the outline and will be in the copies that will be distributed.

The stitches and processes covered by these processes are such that if they are properly carried out, will give the student a fair degree of skill, develop good habits and technique and ability to judge the quality of her work. These last points should be particularly emphasized.

It is suggested that the outline be used as a guide, and changed to meet the needs of each particular school.

The outline suggested in the pamphlet is for fifth and sixth grades only, and includes no machine work. Under the present conditions, it was best to put the emphasis on hand work, and to omit the machine work. It seemed to the committee that there was enough technical ground covered to distribute through the four grades, 5, 6, 7, 8, due to the fact that so many schools will always have a few extra problems, such as costumes, Christmas gifts, etc.

#### Suggested sequence of problems

1. Making of sewing equipment
  - a. needle case
  - b. pin cushion
  - c. bag
2. Hemming dish towels
3. Darning
4. Kimona night gown or one simple piece of underwear  
7th and 8th grades
1. Cooking outfit for first year high school
  - a. apron
  - b. towel
  - c. portfolio
2. Mending
3. A piece of underwear necessitating the use of a fairly complicated pattern such as a princess slip

#### Nomenclature

##### Stitches and processes for elementary grades

- I. Stitches
  - basting
  - running
  - hemming
  - overhanding
  - combination stitch
  - overcasting
- II. Ornamental stitches
  - chain stitch
  - cross stitch
  - feather stitch
  - blanket stitch
- III. Processes
  - buttonholes
  - seams
  - French

- fell
- overcast
- putting on of bands
- sewing on of tapes, hooks and eyes, button, lace
- IV. Mending
- darning
- patching

Committee	Miss Tucker
	Mrs. Freeman
	Miss Edmundson
	Miss Thompson

From the standpoint of the high school teacher, the best standard that could be asked of the grade teacher of sewing, whether the amount of time devoted for sewing be short or long, is the forming of good habits such as (1) correct position while sewing, (2) the use of a thimble, (3) use of suitable needle, (4) neatness and accuracy, (5) completion of one article before another is begun.

The discussions of the work in the grades which followed show that most of the teachers present taught both grades and high school work, and the standardization was controlled by themselves. The very splendid Review of Textbooks on Food presented by Miss Elizabeth Stone of Decatur High School was as follows:

#### REVIEW OF TEXTBOOKS ON FOOD

This is not meant to be a critical review of books on food, but rather to give the author's purpose in presenting the book, the general arrangement of the contents, the method of presentation and something of the adaptability of the book to various conditions.

Domestic Science teachers have many problems in common, but the locality, the environment and the occupations of different communities create our special problems, and their solution depends largely upon the skill of the individual teacher. There is probably no greater help in overcoming these difficulties, than by studying conditions in as many localities as possible, discovering the way in which other problems have been met, and then from these suggestions attacking ones own. A study of the various textbooks, is a field where we may all receive many helpful suggestions. From these suggestions we may be able to build a course of lessons which will fit our conditions. Were we to find a text which we could follow exactly might it not destroy the initiative of both teacher and student? Hence we are not looking for the perfect text, but for the good we may find in each.

The time of a teacher does not allow a *complete* study of so many books as are to be presented unless it extends over a vacation period, and no doubt many good points of the books have been overlooked, but the points looked for in this study were given above: viz: Author's aim, its contents and plan, and something of its adaptability to certain conditions.

Almost every book in the group studied deals to some extent with the following subject:—

- Care of the home.
- Fuels and Stoves.
- Feeding and care of children.
- Feeding and care of invalids.
- Menu making and table service.
- Foods.



The greater part of most of them is given to the subject of food and a few have a short laundry course.

We might classify the books with regard to the extent with which they deal with each of these subjects, in group one placing those of the more elementary type, in group two those meant mainly for high school work, and in the third group those for high schools with a four-year course, or for Normal schools.

The books reviewed that have been written for elementary work or short high school course are as follows.

1. "Science of Homemaking" by Emma E. Pirie (Publishers, Scott, Foresman.)
2. "Domestic Science Principles and Applications" by Pearl Bailey. (Publishers, Webb Pub. Co., St. Paul.)
3. "Austin's Domestic Science" books I and II by Bertha J. Austin. (Publishers, Lyon and Carnahan.)
4. "The School Kitchen Textbook" by May J. Lincoln. (Publishers, Little, Brown and Co.)
5. "Domestic Science" by Ida Clark Hood. (Little, Brown & Co.)
6. "A Handbook of Home Economics" by Ella Proctor Flagg. (Publishers, Little, Brown and Co.)

The first book mentioned, "Science of Homemaking" by Emma Pirie, gives as its aim "the developing of underlying science in food preparation, the physiological facts of food and digestion, the effects of heat upon food, and also "to secure for the pupil a fair degree of skill in preparing and serving food."

The book is divided into four parts. Part One, deals with the care of the home. Part Two, Selection, preparation and serving of food. Part Three, The care and feeding of children and invalids. Part Four, Laundering. This last is a very short course, only giving directions for work without an outline of any kind.

The book follows the chapter, or topic, plan, instead of the lesson plan.

Part One includes 38 pages on the home with a list of very suggestive review questions at the close.

Part Two, which includes the greater part of the book deals with food. The general discussion with which each chapter begins gives the composition of foods in the group discussed some experiments to test composition, the principles used in cooking, the selection and preparation and cooking, of each food. Many recipes follow and at the close of the chapter are the "questions and problems".

The experiments suggested are not numerous and most of them do not require separate equipment, although some of them require some time for completion, as the drying out of vegetables, to note loss of weight in the process. The list of "questions and problems" are very helpful for review work and to test the students reasoning power. At the very close of the chapter is a list of "supplementary recipes" each referring to a page in the back of the book where the recipe is found.

While this book is intended for the more elementary work, yet it contains material enough for high school work as given in most high schools.

"Domestic Science Principles and Applications" by Pearl Bailey, is meant for schools "having a two-year course in domestic science" not necessarily grade, nor high school, but the first two years of the work.

Its special feature is the large number of recipes given. It follows the lesson plan and altho perhaps only one recipe may be used there are a large number from which to select. This makes it a valuable cook book after school days. If principles in cooking, and knowledge gained are associated with certain pages in a cook book in the student's mind one can see how she, in using the book in her home later, may be reminded of these and thus form a habit of doing

things correctly. (This is said with the slow plodder in mind). As a general rule we hope the knowledge has struck deeper and has become a part of the student's working and reasoning knowledge.

There are suggestions for a few experiments but little of a descriptive nature. The first part of the book is given to detailed description of working uniform, laboratory equipment, laboratory work and the care of furnishings and utensils in the laboratory. These are very suggestive for the new teacher.

"Austin's Domestic Science" by Bertha Austin, consists of three books separately bound. The first two books are for the first and second years of the work, and the third book for the third and fourth years of the work.

The special features of this book are the reading lessons, given at various intervals, and the numerous illustrations. This book follows the lesson plan.

The reading lesson is given as the introduction to a new subject. It contains the history and information concerning the growth, harvesting, and care of foods with many things of interest concerning the special group of foods included in the topic.

The third book which is meant for the more advanced student, has several chapters on house-hold Economics including cost of living, business of the house-hold, kitchen chemistry, dietetics and invalid cookery, and new kitchen appliances. In the appendix is found a list of twenty-one suggestive experiments, as well as a table of weights and measures, and a chapter on table service.

Each lesson throughout the three books has a definite lesson plan. It is as follows:—

1. Materials used—Home rule—Class rule.
2. Utensils needed.
3. Work to be done.
4. Principles involved.
5. Serving.
6. Table manners.
7. Suggestions on serving.
8. Cleaning up.
9. What has been learned.
10. Additional recipes.

The books are very attractive in appearance both inside and out. The detailed way in which each lesson is outlined and described makes it very suggestive for a beginner, or for a student that has little initiative and must always follow directions. For most students the order for cleaning and the utensils needed is mastered in the first year, at least.

"The School Kitchen Textbook" by Mary J. Lincoln gives as its purpose "to help teachers and pupils in the study of cooking and house keeping" also "to interest students in doing home work for school credit."

The book gives the first 85 pages to instructions in the care of each room in the home, also the care of its furnishings and its utensils. The lessons on fuels and stoves, and serving follows. A complete list of utensils needed in the kitchen is listed.

The plan for the lessons on food is much the same as in the majority of books that divide the book into lessons. 1st. Composition of food. 2nd. Discussion of, and directions for preparing the food. 3rd. Recipes and directions. 4th. Questions on lesson. The unusual feature of the book is that the food lessons begin with "combinations of food suitable for school or picnic lunches." The book, however, is essentially a cook-book.

"Domestic Science" by Ida Clark Hood. The purpose of this book as stated by the author is to furnish a text for seventh and eighth grade work.

It gives much attention to the history of food, to its composition, and to its nutritive value, with very few recipes. She also suggests much supplementary work. For reading lesson use of U. S. Farmers' bulletin, then suggestions for

geography work, history work and nature study all to be correlated with the work on foods. The book is divided into two parts. The chapter on fruits covers 15 pages with only two recipes one for apple sauce and one for cranberry sauce, and only two recipes are given under vegetables, bean soup and baked potato.

If there is no library accessible, nor time for outside work the information compiled in this book may be found helpful.

The plan for the lesson is:—1. History of food. 2. Composition. 3. Food value. 4. Methods of cooking. 5. Experiments. 6. Recipe and methods. Home and school rules are both given.

"A Handbook of Home Economics" by Ella Proctor Flag.

This is the most elementary book in the group. The author says it is a book "to give a simple basis for the pupil to work from."

The simple lessons on "first aid", "laundry", "table service" consist almost wholly of questions, the answers to which, are not included in the book. This is true, also, of the questions given at the close of each lesson.

The plan for the lesson is as follows: 1. Simple experiments. 2. Recipe and directions for work. 3. Questions.

This plan of questioning makes necessary oral instruction by the teacher, and note books if the student wishes to keep a record of same.

The books given as those meant for high school work are:—

"A Text-book of Domestic Science" by Matilda Campbell. (Publishers, Macmillan Co.)

"Nutrition and Diet" by Emma Conley. (American Book Co.)

"Austin's Domestic Science" Book III. The last was spoken of above.

Miss Campbell says her book is to be "placed in the hands of the student to use as a laboratory manual in the schools, and as a practical cook-book in the home."

This book like many others gives the chapter plan rather than the lesson plan. This allows the teacher a choice of subjects to suit her own convenience. For instance if fruits are to be studied, the chapter on fruits furnishes the text, and no matter where found in the book, is complete in itself.

The first Chapters are on the relation of food to the body, classifications of foods, and air and combustion. The last chapters are on invalid cookery, table service, and diet and nutrition.

The plan for the chapter is:—1. Discussion of the food. 2. Its composition. 3. Experiments. 4. Recipes.

The book contains in all 76 experiments and many recipes are given with each chapter. The book as a whole should be very helpful for high school teachers and students, even though time does not permit the use of all the experiments and the recipes.

"Nutrition and Diet" by Emma Conley. The purpose of this book is to furnish a text for high school students so that the teacher may not need to "dictate her college notes to the student."

The book is in two parts. The first part deals with the physiological side of the subject, the planning of meals, the nutritive value of foods, and the classification of foods.

The food part of this book also has the chapter plan. It differs, however, from the rest as you may see by the title, in that it gives no recipes, only discussing each group of foods in general. Its plan for discussion is:—1. Composition. 2. Place in the diet. 3. Food value. 4. Selection. 5. Preparation. 6. Effects of cooking. 7. Tests for freshness. 8. Storing.

This is a book which each teacher enjoys having in her library and if time and money permit, it is valuable in the hands of the student.



Miss Conley has another book "Principles of Cooking" which is meant for high schools and vocational schools. This book after giving general directions for work and the equipment needed, develops the principles involved in cooking of each food principle viz:—carbohydrates, proteins and fats. From this basis the student may give reasons for processes involved in the preparation of foods, which follows, given in the chapter method. The book has many good illustrations. The last chapter gives suggestions for an equipment for rural schools also a suggestive list of lessons possible to teach in rural districts. The school luncheon is discussed briefly, and a list of Farmer's Bulletin's is given as suggestive helps.

These two books contain many helps, given in a simple, practical way, that are not found in other books without a great deal of tabulating and reading.

The three books that are meant for high schools with longer courses in household economics, or for normal schools are:—"Foods and Sanitation" by Forster and Weigley. (Row, Peterson & Co.) "Text-book of Cooking" by Carlotta Green (Allyn and Bacon.) "Foods and Household Management" (Macmillan & Co.) by Kinne & Cooley.

Two of these books use the chapter plan while Miss Green uses the lesson plan. In these books the chapters discuss at greater length the subjects of dietetics, preparation of meals and table service.

"Food and Sanitation" contains a number of chapters on sanitation that are very helpful to teachers who wish to introduce this subject, briefly, into their course. Such subjects as the following are included in this section of the book.

Theories of Disease.

How to avoid Disease.

How to avoid Infectious Disease.

The Situation of the House.

Indoor Air.

Heating, lighting, plumbing, sewage and garbage.

Disposal.

Water Supply.

Clean Food.

Labor Saving and Dust Prevention.

Disinfectants.

This book labels each recipe as an experiment and has many good illustrations throughout, another good feature is the placing at the close of the chapter reference for readings on the subject studied in the chapter.

Miss Green in her book makes the lessons center around the meal, hence at intervals a review lesson is introduced in the form of a meal. This does not group the foods into classes but each class may be found in each group of lessons that precede the review, or meal lesson. There are many experiments suggested throughout, also many good illustrations. A list of suggestive questions is given at the close of each lesson, and a large number of recipes are given covering the whole range of foods. Some of the menus suggested are not always desirable, or well balanced but one may substitute her own for the review work. "Food and Household Management" by Kinne and Cooley contains chapters on these subjects:

The Cost and Purchase of Food.

The Household Budget.

System in Management.

How to Buy.

Housewifery.

Laudering and Dry Cleaning.

This book is good in the outlining of subjects presented and they are treated in a brief, comprehensive way. The number of recipes given are not numerous. The questions at the close of each chapter require thought and work on the part of the pupil in answering. The illustrations are also good.

The emphasis placed upon the cost of food and the comparison made between home products and factory products, as well as cost compared with fuel value of foods are two valuable features of this book.

There is one more book that came to my hands "Food and What it Does" by Edith Greer but time did not permit a review of it. At a glance it looks as if it were what its title suggests and not a cook-book.

For our ideal text we have many suggestions in these books, and yet, no doubt, when our text is completed it will be found to suit only one person and that person—oneself. It may not even do that, long, for a growing teacher of a growing subject. After all it is not so much for the teacher as for the student that the text is placed on the market.

The needs of the student in each school varies, but as said of the teacher, the student needs are mostly common, and she who wishes to specialize must go to the reference books along the line in which she wishes to specialize. It is therefore the teacher's problem to decide which book best meets the needs of the most of her students, and yet to be able to direct those who wish special lines, to helpful sources.

The person who receives the most good from this kind of a review is the person who gives it, and my greatest regret is that I am not able to share more generously with you the help that I have received from this study.

The place of the Market Basket in a High School Food Course was next discussed by Miss Lucile Wheeler of the University. Her paper in substance was as follows:

#### THE PLACE OF THE MARKET BASKET IN A HIGH SCHOOL COURSE

The purpose or aim of any food course in secondary schools is fundamentally, the development of technique, the teaching how to do. The teaching why and the theories vary, depending upon the place of the course in the school curriculum. The purpose beside that of technology is also as excellently stated, in various high school announcements to develop good judgment, to teach food values, food combinations, planning and serving of meals, food preservation, sanitation; digestion, manufacture of foods and a knowledge of food sources.

It seems like a great deal to put into a food course when the other departments are just as eager to teach all they can in their chosen fields. So it is rightly asked how much should be taught, how much taught is actually retained and becomes of value in the experience of the student.

The development of any food course is dependent upon the aim it has and the factors which necessarily enter into its modifications. A course given because a community feels the need of a general housekeepers course will naturally stress the housekeepers problems, and home methods. Another course may have more time given to food production, methods of manufacture and so bring out correlations with commerce. Scientific backgrounds, make it possible to emphasize food composition and food values through a knowledge of materials. Correlation with Physiology should be possible everywhere. The correlation with arithmetic should and could be made more vital. The relation of the rest of the curriculum to the courses in foods must necessarily be studied. On looking over the announcements of various high schools, it is found that freshman courses usually include physiology or biology or general science. Physics and Chemistry in practically every case are offered the Junior and Senior year or vice versa. The courses in Domestic Science come the first two years; where food courses are also given the Junior and Senior year, they are usually Home Management, Home Nursing, Dietetics or Sanitation. If food courses are not preceded or paralleled by physiology, the teacher of the food course must herself teach some physiology. At any rate it is left to her to draw out the importance of physiology and food. Also she must teach much fundamental Science as well

as the applications as far as it is necessary, since the pure sciences succeed her work. After analyzing the situation, what has the student for a background on which to develop a food course of greatest strength? Since there is no prerequisite science except physiology in most cases the strictly scientific food course can be left to the college curriculum where it can be based on entrance science and correlated science courses in college and can be developed along experimental lines.

Domestic Science in high schools for its background draws from experiences more economic in character. Every girl has had years of contact with food, three meals or more a day, and often as a necessary accompaniment of those three meals the topics of discussion, important now if never before, money expenditures, cost of living, high prices of foods. The more thoroughly this everyday experience is utilized the more closely will it bring the home and school together and the more will it make the school work of practical value. As Miss Sarah Louise Arnold has said, "Nothing in Home Economics, no place, no device, no isolated fact is important except as it is related to the essential purpose of the home."

The child in the home learns the first thing that round pieces of metal are money. He, in a few years, knows that pennies buy candy. He knows which corner grocery store gives the biggest stick for a penny, too. He has investigated and according to his standards learned the buying power of a cent. There is significance in that. Pennies become replaced by sums of larger denomination, but the development of judgment, knowledge of materials, places, has not kept pace with the increase in money values.

Household Science has great opportunities as it binds together experience in the home, food work, practical arithmetic in account keeping, and the knowledge of sources of production and marketing conditions. Now more than ever before stress must be placed on the economics of the buying and of wise utilization with the elimination of waste. If any place in the home needs an efficient engineer, it is in the matter of purchasing food.

Domestic Science courses in high school are more for the girl not going to college than for the girl planning to get four more years of education. The girl who remains at home and relieves the mother of some of her cares or the girl who marries soon needs the practical training, and wise guidance in the manner of future selection and spending. Emphasis need not be put on the word future, for there is hardly a case where the laboratory practice can not be put into present use. Marketing—selection of food is prerequisite to its preparation.

The market basket is a means of centering loose ends from informational sources if used as a keynote in a food course. It is the connecting link between the housewife or student and the markets and the link between the isolated food dishes in the laboratory kitchen and home needs. No one now is outside the circle of those interested in the soaring prices of food. All must eat, what is eaten is determined for many by price, if not by rational selection of the foods, according to their nutritive value. Too few housekeepers are interested in the markets or places where food is purchased. A telephone, a delivery boy, much paper and twine, take the place of the old market basket. Students too often use the materials placed on the supply table without a thought how they got there, what they cost, and what their values.

The courses in domestic science in high school can teach three phases of the work successfully—the technique necessary for the best preparation of food, the digestion and value of that food, and thirdly, the cost of the food materials. The economic aspect in the cost of foods may be made of great value by class trips to market or by trips made individually and reported on by the students. One student could report for a week. In places where markets or stores are too small to be of great value, the newspapers can be watched and the market conditions of the cities noted. In small places the market is just as important as in larger, for there supplies may be shipped in rather than received from the city and even more interest taken in food quotations. Market trips make one



familiar with existing conditions. It keeps one informed of the vast variety of food materials, thus preventing one from becoming limited in the choice for the table, or getting into a rut with the familiar commonplace, "What will I have for dinner?" The members of a class were once given a list of vegetables in season and obtainable in the market and asked to check those they had seen or eaten. It was surprising to learn the number which were entirely new to the students. In the country in winter it is possible to have 15-20 fresh vegetables if care is taken to store them. Among the common ones are celery, parsley, parsnips, turnips, beets, cabbage, cauliflower, egg plant, carrots, onions, horseradish, rutabaga, kohlrabi, salsify, sweet potatoes, pumpkins, squashes, while mushrooms, asparagus, rhubarb, may be grown with little trouble in the cellar.

The trips to market make it possible to take advantage of special priced foods due to an oversupply at a particular time. If the price for an article seems exorbitant, it is easier to make substitutions for that if one can observe the stock. It also keeps one on the alert for new food materials.

Again if we consider the market basket idea as meaning supplies in amounts for an average family, we would get away from the small quantity idea which comes from the individual recipe work in the laboratory. Then whether the materials are purchased by students or not whatever recipe is used in the laboratory should be made up to family amounts. In economics we use a family of five as a standard. Any recipe used in the laboratory could be made suitable for this family of five which is to be discussed through food, shelter, and clothing budgets, thus emphasizing the family quantities usually purchased and the yield as to number of servings, etc. A third point would be stressing the cost of the dish as served. The cost of the food with a discussion of its nutritive value. If market fluctuations caused important variations in price, the cause of that may be sought in season, local or international demand; crop failure, lack of shipping facilities. A year ago flour was 3c a lb.; this year it is 6c. Flour as an essential ingredient of all breadstuffs has affected their price as we know too well. Articles of food purchased in the market cost much less than when ordered and delivered. I have heard women widely known because of their ability in cooking say that not only for their demonstrations but in their housekeeping at home they personally selected their materials. In so doing, small quantity materials for example, a pepper, an onion, a few tomatoes, whatever the need might be, possibly to be used only for seasoning, would be a few cents, when if charged and sent they would cost many times that amount. In New York where school lunches were started to increase the school children's efficiency by furnishing them proper food, the staple foods are purchased in quantity through the central agency, but each director has a petty cash account with which she buys fruit, greens, and other perishable supplies at the markets, wherever the buying is the most economical. In connection with the cost of food, we find a place to apply mathematics, in the correct estimating of prices for varying amounts and the keeping of a food budget. In the October, 1916, number of the *Journal of Home Economics*, was an article on "Mathematics as applied to the Household Arts". The teacher of food should feel it part of her duty to bring into use what the mathematics teacher has taught. Things become ours through use and any emphasis we may put on arithmetical gymnastics may help to make the future housekeeper more alert in watching for short weights or over charging.

Another point which could be emphasized centering around the family provisions as a basis, would be the selection of foods which would be suitable to combine with the articles made in the laboratory. Economy necessitates that the variety be not extreme and in the purchase of foods for a week variety should be obtained from day to day—or variations in the way those foods are prepared. The article made should not stand out as a laboratory experiment alone, but takes its place on the home table with suitable accompaniments. The week's menus should not be composed of all light vegetables for every dinner or heavy desserts after a dinner, whether light or heavy. In purchasing vegetables, a knowledge of shrinkage is needed to know what amounts to buy. With

cereals the increase in volume determines the number of servings yielded from a certain amount. Such facts must be driven home if the work is to be of practical value.

The market basket as a keynote to a food course seems of vital importance since, (1) it can bring the student to a realization of what the market offers, (2) it may be a step up transformer from laboratory recipes to family quantities, (3) it is an emphasize of what the cost of materials are to school and home, (4) it guides the student to wise buying in quantities and in suitable combinations.

The Round Table on "My Hardest Problems in Teaching" led by Miss Grace Hinschliff brought forth much discussion and many suggestions:—The problem of what should a girl do in sewing when she finishes her garment in less time than it takes the majority of the class was discussed. The following suggestions were made:—Give her references to look up in textile work; hem dish towels; let her work on something she would like to do; have material at hand so she could make something for some poor child in the community. Another suggestion was to give the girl who can forge ahead some advanced work or something worth while. She should not be held back by mere busy work. The subject of requiring home work in sewing was discussed and the conference was about evenly divided for and against home work. Another problem was as follows: Shall all girls be given the same kind of a garment to make or should they be given individual problems? The majority of opinion was in favor of giving the same problem to be worked out by all girls otherwise class instruction becomes impossible and the class becomes a mere sewing class with individual instruction. The note-book work how much should be required and when should the notes be written brought up the question of cooperation with the commercial or printing department of the school. Dictation should be minimized and all notebook work should be reduced to a minimum. As much of the work should be mimeographed, typewritten or printed wherever possible. If texts or manuals are used the amount of dictation and copying of notes can be greatly reduced. Should girls in a food course be required to prepare food for a luncheon was next discussed. If the aim of the course is vocational, luncheon work is justifiable. The whole problem of the lunchroom should be thoroughly analyzed. It involves several questions; (1) Should girls be required to make salable food combinations without first understanding the underlying principles of food preparation? (2) Should the educational interest of a girl be sacrificed in order to meet the economic problem of the school board? (3) Can salable foods be provided in large quantities each day without loss of the educational value of the subject? Does it mean a repetition of the same work by the girl who can best do that work? The discussions gave much food for thought.

The nominating committee next reported Miss Helen Murphy of Decatur and Miss Kathleen Gaynor of La Salle as the new members of the executive committee. The report was approved and accepted.

The Round Table, "What a high school girl should know about textiles and sewing in a year's course in clothing" brought out the following: In planning a course the different groups of children must be taken into account. Their native ability, home conditions and the use which is to be made of the education received. In a year course in clothing, the following should be included:

1. Study of four principle fibres—cotton, wool, silk and linen
  - Sources
  - History
  - Cultivation
  - General steps in manufacture but not detailed
  - Spinning and weaving of fibres
  - Characteristics and properties
  - Adulterations of fibres and material
2. Review hand stitches (just enough to insure good results)
3. Commercial patterns (not much drafting)
  - Make useful and suitable garments
    1. underwear
    2. simple waist
    3. plain dress
4. Care and Repair of Clothing
5. Requirements of good dress
  - Line and form adapted to different figures.
  - Color—suitability to types
  - Economic
  - Hygienic

If two forty-five minute periods a week are devoted to recitation work, the above subjects could be covered. If less time is devoted to recitation work, the history, cultivation, general steps in manufacture, spinning and weaving should be omitted.

The subject of Costume Design was next introduced by Miss Ethel Irwin formerly of Stout Institute. Her paper in part was as follows:

Fortunately it is not necessary to preface a talk on costume design, in this enlightened period of belief in the development, in education, of the aesthetic side of human nature, with psychological arguments as to why we have come to believe that art is an essential quality of human life, because we have all been convinced. We no longer take "art" in the narrow sense to mean the painting of pictures, but we rightfully take it to be a state of mind, as Mr. Parsons so ably puts it.

I cannot resist suggesting one argument for art education that you might find worth using, and that is this,—that Art in Home Economics Education is, and must be, fundamental to Domestic Art, just as science is to Domestic Science. It is true that science is indispensable, but art is the fundamental. It is as truly based upon workable theories as is science, and it is no individual question of mere feeling. When this is realized and understood, the question of art education will seem vitally more important and more tangible.



To get definitely at a few points in costume design, which is the art foundation for dressmaking, millinery, and art needle-work, it is necessary to go back to simple art simples which serve as a foundation for pure fine art, as well as for costume design and interior decoration. I am going to be very unconventional and work rather backwards and forwards, "at" and "away" from the principle by taking definite concret examples. I have taken five types of individuals, the classification being made as to color and physical stature. They are these:

- I. (a) Blonde, light, rather dull hair.
- (b) Blue eyes.
- (c) Color in cheeks.
- (d) Large in stature.
- (e) Short.
- (f) Broad.

and shall try to be of some help in suggesting principles by which one might be guided in choosing costumes for these individuals.

Two themes have to be considered, color and line. As the subject is naturally extensive, I shall spend practically all of the time on color. We will take one type of costume,—that of a conservative afternoon dress.

The first thing of importance is color. We shall take it for granted that you know the kinds of color appropriate to afternoon dresses, and assume that the proper shades of all the colors are laid out from which these individuals are to choose costumes. We shall bar all ideas of feeling for color, intention, and innate good taste, and give definite facts as to how to choose. Shall she choose white or light shades, gray or medium shades, or black or very dark shades?

(Illustrative material showing effect of white, gray and black on gray background.) The general background for all life is neutral gray, because it is a combination of all the colors. You cannot say the background is red, because it is only red when you stand against a red brick building. These illustrations go to show that white or light colors are the most conspicuous, and that black and dark colors are next; that gray or grayed medium colors are the least conspicuous. This is important as concerns the silhouette, or outline of the figure.

(Illustration of Venus de Milo.) Venus de Milo is an example of a perfect woman's figure, and perfect figures should be used constantly as ideals toward which to work. If a figure is smaller or larger than the ideal figure, it may at least have, or be helped to have, the appearance of a perfectly proportioned figure. Now, this individual is too short and too broad. If she is dressed in grayed shades, her silhouette will be less definitely outlined and conspicuous, and we shall have greater opportunity to make her figure seem more perfect, so that will be point one,—that she is dressed in grayed colors.

(Graying means combining complementary colors—amount of each to depend upon color desired.)

(Illustration of grayed colors.) Which of the grayed colors is best? (Theory of cool and warm colors, and advancing and receding colors.)

If white or light colors are used for collars and cuffs they should be kept inside of the silhouette to keep its outline from being prominent.

Now then, it is necessary that the color theory be explained, and two simple types of color schemes will be suggested,—complementary schemes and analogous ones. (Illustration and explanation of color chart.) Her hair is a kind of yellow, and is dull. If the complement, which is violet, is used, it will emphasize and better the color of her hair, so that violet, thus far, is practical. Now then, will a complement of yellow be satisfactory for her complexion? It will be, for the color of her cheeks will offset it. Lavender, with her eyes, will form an attractive analogy, and as violet is a receding and cool color, it will be entirely satisfactory. Green may be satisfactorily used as its complement,

may brighten the hair, and unless the complexion is over ruddy, will be attractive with the cheeks. Red will have to be barred because it is too warm and too advancing a color. Also, its complement, green, has a very unfortunate effect upon blonde hair, contrary to common opinion, which says that "red gives color". Blue is appropriate; yellow and orange will not afford enough contrast, and the effect of their complements will be bad, not good.

There are many other phases that enter in,—that of simplicity, of individuality and personality, of originality, and of suitability, but the subject is not to be exhausted in one afternoon.

When it comes to pass that we can safely cross traffic crowded streets with our eyes straight ahead, and not be distracted by the extraordinary, grotesque, and conspicuously strange to behold costumes that now commonly move about us, then, at last, will the "safety first" warnings be really effectual in their results.

The report of the library committee was read and discussed and a few changes made in the lists, and finally adopted. Following is the executive committee for next year.

Florence Harrison, University of Illinois, 1917, Chairman.

Isabel Bevier, University of Illinois, 1917

Anne Green, University of Illinois, 1918

Bertha Case, Peoria, 1918

Kathleen Gaynor, La Salle, 1919

Helen Murphy, Decatur, 1919

Florence Harrison, Secretary.

#### ENGLISH SECTION

The ninth annual meeting of The Illinois Association of Teachers of English was called to order at nine o'clock in the Moot Court Room at the University. In the absence of the president Doctor J. M. Clapp, Professor Dodge presided. Doctor Dodge spoke briefly upon the topic "Common errors of Speech on the part of Teachers", urging the need of cooperation among all high school teachers in the effort to secure correctness of speech both among themselves and their pupils. He deplored the tendency among teachers to emphasize trifling differences of usage and pronunciation, urging agreement, however, upon fundamental matters of good form about which there can be no question.

The Conference then proceeded to business. The Chair appointed a nominating committee consisting of Professor Paul, Mr. Cavins, and Miss Morris, and a committee to award prizes for literary programs. The latter consisted of Mr. B. C. Richardson, Miss Gertrude Fleming of Olney, and Miss Bella S. Turk of Macomb. Miss Kathleen Roberts of Urbana was appointed a committee of one to report to the general meeting on Saturday morning the results of the Conference.

Professor Paul presented the first paper of the session—a discussion of Books for the High School Library”. After presenting a rather extensive list of titles with prices, the speaker passed about sheets of paper, asking the teachers to indicate the titles that they would elect to purchase with a given amount of money at their disposal. The value of the experiment was, of course, not so much in the immediate results obtained, but in the material secured upon which later conclusions might be based.

The main investigation for the year was concerning the High School Literary Societies. The results of the study were presented by Miss Eva Mitchell of Bloomington.

Following is a summary of the investigation as reported by Miss Mitchell:

#### *Membership and Organization*

As nearly as could be ascertained, over half of the high schools in the state have literary societies. They average about three to a school; some having as many as twelve, others only one.

More than two times as many schools have combined societies (i.e. consisting of both boys and girls) as have segregated ones.

Where membership is limited to certain classes, it is usually confined to upperclassmen; at least to second, third, and fourth year students. Sometimes students making a certain grade are eligible, and in some clubs admission is granted by vote of the members. In a few schools the number of societies to which a student belongs has been limited.

One-third of the schools reporting require participation in societies. The credit is counted on English grades in some institutions, but in others a grade in “Rhetoricals” is demanded for graduation.

In number of members the societies range from eighteen to one hundred twenty-two. Debating societies average about twenty-five. The clubs, dramatic, civic, etc., average about thirty-five.

The ages of the societies run all the way from three months to twenty-three years. The youth of the clubs which are organized for work along special lines, indicates that the modern trend is in their direction.

President, Vice President, Secretary, and Treasurer are the usual officers. Many secondary officers are added. They are uniformly elected by ballot. Membership in a society is the regular requirement, but some clubs confine themselves to upperclassmen in such elections.

#### *Meetings*

Friday is the favorite day for meetings. The girls usually meet after school; the boys at night. The combined societies meet either time. The meetings average two every month.

Most societies meet in the assembly room for obvious reasons..

Seven schools report club rooms, specially fitted and exclusively used for meetings.

Practically all societies permit visitors and over half encourage them. The reasons for encouragement are: to stimulate greater effort, accustom speakers to an audience; gain new members; show community what the school is doing; entertain and interest parents; encourage social activity; finance the society by charging ten cents admission. The reasons for non-encouragement are that



students need training without audiences; there is no room for spectators; visitors interfere with spontaneity and comradeship of meetings; there is no need to advertise.

### *Faculty Relations*

A few faculty members are also members of societies, usually where such teachers are alumni. Practically every club has a faculty sponsor.

Attendance at programs is required of all the faculty in nearly one-half of the schools. The presence of one faculty member is required in practically all clubs.

Ninety percent of all the programs are submitted to some member of the faculty before they are posted.

Two-thirds of the programs are prepared under faculty supervision. The other third have the privilege of faculty advice if so desired.

One-third of the clubs have regular coaching for each performance. The other two-thirds have access to coaching if so desired.

Five out of every six societies have faculty critics. As a rule the criticisms are offered in private. In three-fourths of the societies faculty members never appear on the program; in many, faculty members appear regularly for examples of different methods of presentation.

Faculty members are held responsible for the discipline in two-thirds of the clubs. The order in the other societies is left to the student officers who are reported to care for it effectually.

### *Program*

There are three times as many general societies as all the other clubs combined. About one-third of the schools have debating and dramatic clubs. The former are usually confined to boys and the latter to girls.

Two-thirds of the programs include short plays; one-third include parliamentary drill. The consensus of opinion is that they both pay.

Each member appears on the program on an average of four times a year.

In specialized clubs he is permitted to offer the same kind of work at successive performances. In three-fourths of the general programs an effort is made to vary the character of the numbers offered.

Two-thirds of the schools give no credit for any work done in a club. The average credit given is one for four year's work, sixteen performances. A few permit numbers to take the place of English assignments.

Where "Rhetoricals" are required for graduation the penalty is no diploma. One-third of the schools have no penalty. Fines, suspension from classes, withholding of English grades, and make-up programs are the common penalties.

Numbers are criticised on literary merit, voice, pronunciation, enunciation, material and attitude.

Nearly half of the schools are attempting the education of a modulated speaking voice by engaging teachers of public speaking; correcting postures, tones, articulation, enunciation; and by improving voices of faculty. One school has a voluntary class in public speaking. Ninety percent of the reports say the work is practical if trained teachers could be found to conduct it.

### *General Information*

The chief weaknesses in societies in general seem to be: light entertainment, tendency toward stunt shows and vaudeville or merely social evenings with purposeless programs; faculty domination which makes the programs too serious "and eliminates the greatest good—the social side"; over participation by students who need it least; lack of definitely organized programs of such a nature that their presentation leaves a unified impression.

Besides the general weaknesses, these special weaknesses are recorded: exclusive spirit which turns societies into fraternities or sororities; inability to give credit; undesirable rivalry; lack of attractiveness in comparison with athletics.

The chief advantages include parliamentary drill; development of responsibility, initiative, originality, executive ability, charity, tact, loyalty, self-confidence, poise, critical sense, leadership, and use of library; creation of interest in other phases of literature; development of ability to see two sides to a question; provision of activity for boys not interested in athletics; solution of high school fraternity problem; social value in that parents are entertained and school is made a more intimate social factor in the community; desirable rivalry; laboratory work for all phases of "Better Every-day English".

Besides the fifty programs on exhibit, many suggestions were made. One club reported an interesting alumni program to which the town alumni contributed the debate, reading, and musical numbers; while the alumni at college sent alumni notes, an essay, a short story, and letters. The same school is planning exchange programs with nearby towns this year.

Several history clubs report that they introduce, debate, pass, or reject current bills according to regular parliamentary procedure.

One school suggests an "Old Soldiers' Program" to be given near Memorial Day. Only the best performers are given places on these special occasions.

"Break up the general societies and group the students whose interests run in the same lines. Your best work is done in specialized programs."

"Add a social meeting at regular intervals, at which time the program—if any—is very short and light."

One Principal awards a banner to the society which totals the highest grades.

"Keep your material up-to-date. We had an automobile program recently at which there was much enthusiasm."

"We add interest by contests, inter- and intra-society."

"Invite clever outsiders to appear on the programs so your members do not become too satisfied. Such numbers will lend variety and inspiration."

"By all means get a teacher of Public Speaking."

"Give your overworked English teacher one class less, so she has time."

"Appoint a state committee to outline and prepare a course in society work which will justify the giving of credit."

Many schools which do not have literary societies—as such—have organized each English class into a club with regular officers, presenting programs at class time. Sometimes these programs prove interesting enough to be repeated at general assembly.

A general discussion followed. Miss Hubbard of Carlinville expressed a general conviction when she said that unless there were adequate opportunities afforded for the supervision of school literary societies, they were not of appreciable value. She believed, however, that well organized, and supervised, they were likely to be of great service. The latter opinion was echoed by Mr. Richardson of Alton, who told of the literary societies in his own school. Here attendance is compulsory. The meetings are held during school hours, the hours being utilized in rotation. A limited amount of credit is allowed in many schools, it appeared, for excellence in debate conducted in these

societies, and the school monogram is awarded to the winners in such contests. Upon Miss Skeffington's query whether the Conference wished to proceed further with the investigation of the literary societies, Mrs. Meeks of Danville moved that a committee be appointed to prepare programs for a year's work in a high school literary society. After considerable discussion, the motion was carried, and the following were named by the chair: Mrs. Meeks of Danville, Miss Olive Martin of Sullivan, Miss Laura Whitmire of Aurora, Miss Alice Bidwell of Freeport, and Miss Olive M. Bear of Decatur.

A short business session opened the afternoon program. The committee reported that the first prize had been awarded to Freeport, the second to Aurora, the third to Decatur, with honorable mention of Rossville, New Trier, and Watseka. The nominating committee reported the following nominations: For president, Mr. C. V. Cavins of Joliet; secretary, E. C. Baldwin of Urbana; treasurer, Miss Roberts of Urbana, and as members of the English Section Committee, Miss Skeffington of Charleston, Professor Paul of Urbana, and Miss Julia Gettemy of Moline.

The first paper of the afternoon was that of Principal W. E. Andrews of Pana. The paper follows:

#### DEFINITE COOPERATION IN HIGH SCHOOL ENGLISH

The teaching of high school English is barely more than in its infancy. There are some of us here who witnessed its beginnings. The writer studied English under a Dartmouth graduate who was an ex-principal of the Lynn, Massachusetts, high school. Milton's "Paradise Lost" and Pope's "Essay on Man" were parsed. The blight of grammar then blasted English teaching. The mention of Hart's texts in rhetoric and literature will remind some of us of those great times when the model copied in designing a text-book in English literature was a railroad time-table.

To abuse a classic by mutilating it to illustrate the rules of grammar, when grammar was king, was eminently justified; but for a season, only. To require the committal of brief facts regarding the biographies of authors seemed to be teaching literature, when history held sway. Always English has suffered by being made a victim of some other type of study.

Somehow it has been realized lately that every time we think a thing, read a thing, write a thing, or say a thing we make use of a certain kind of endogenous training; and, somehow, we are beginning to realize that efficiency in any of these activities is dependent strictly upon the degree of skill to which we have attained through this special type of training. To neglect to train pupils in effective oral expression of their own thinking under the specious plea that they are more interested in reading a classic for its content, tomorrow may seem to be another grotesque distortion. Memoranda do not come to the mind in a way that renders it skillful in energizing and controlling the stream of thinking—consciousness. Only practice, long continued, definitely motivated, and specifically guided can intensify this stream, control its directions, and faithfully vocalize its utterances. The only channels along which these streams of consciousness may easily and effectively flow are those established by attainments in fluency in the use of the mother-tongue. This aptitude is attained only by practice in self-expression.



A widely known writer, who has a keen eye to see conditions in American life, says that "No teacher ought to be employed in our schools who does not speak English contagiously well." This standard emphasizes the personal example of the teacher as a factor in English training. How long would we be required to witness Miss Kellerman's exhibitions in swimming in order to learn to swim? We do not acquire effectiveness and facility in English expression by witnessing these in others. In college I never could study in my room, if a student, who was naturally interested in English expression, roomed next door; he was always engaged in vigorous conversation with imaginary auditors, or was delivering stirring addresses in an imaginary auditorium packed with an imaginary audience. I never found him posing as an auditor. He never occupied, in these fanciful experiences, a seat amid the audience and sat and looked and listened: he was it all the time. Somehow when I go to the wood-working shop I can't help but to see why our pupils do not achieve more in the way of personal attainment in English. I always find there the pupils making things. The teacher is not in the pulpit lecturing, or on the stage giving an exhibition; the pupils are producing the identical things which are the outcome of those processes in which they are supposed to be under training to learn to do.

This vicarious blight today blasts English training. Proxies are everywhere. The writings of authors are used as substitutes for actual personal practice in forging thoughts fresh from the pupils' mental furnaces. The pupils behold, listen, perhaps appreciate, but they do not often enough touch the tools on their own work-benches. Just as in athletics, the activity of the students consists merely in beholding the contests of the professionals, with occasional modified exercises of their own respiratory organs, so in their English training the pupils do not often enough have adequate opportunity to learn to do by doing. No amount of content-study of another's work will suffice for the neglect to train the pupil to develop the content which natively inheres in his own potentialities. Undeveloped natural resources in the sphere of personality cry out against the silencing of the primal source of personal power by substituting a spectacle for self-activity in initiating and expressing thoughts. Genuine training in English reaches within the farthest to awaken latent talents, to prompt and develop those dormant capacities which in the untrained incapable person exist as aptitudes that are shrunk by arrested development.

To establish and maintain a department of English for the purpose of training the high school pupils in their oral and written English, and to neglect to require all the other department teachers to uphold the standards set by that department is a common oversight in high school administration. Concerted team-work throughout the entire staff, specifically planned to secure standardized oral and written participation on the part of the pupils, is indispensable. If the English teacher, or teachers, do their best to train the pupils in English expression, and the other teachers in the staff accept as creditable the expressions of pupils who ignore the standards set by the teachers of English, the training of the majority will overwhelm that of the minority.

The vital question in each high school is: How organize all the teachers so that the English training of each will definitely reinforce the training as standardized by the department of English? How get before the attention of all the teachers the fact that indifference on their part to the standards of English demoralizes the English training in the high school? How convert those teachers who assert that they are teachers of their special subject and not of English?

It is not an easy matter in high school administration to gain for English due staff consideration, effective team-work in this subject, and to maintain, daily, those concerted usages which confront the pupils throughout their high school experiences with constructive, sustained, and consistent English train-

ing. Still it can be done. Certain definite aims may be prescribed. A propagandism must be maintained through the teachers' conferences. Specific publicity must be given to the details of the work expected of the teachers in all of the departments. Energetic administrative work is the price of whole-staff cooperation in English training. The aims and standards must be effectively phrased and established in the consciousness of all the pupils also. This consciousness of English standards must be kept uniformly keen and clear in every class-room. Specific duties in English training must be definitely set for every department teacher.

#### A DEFINITE STANDARD OF EFFICIENCY

##### A Powerful Teaching Measure

The most important practice-work within reach of the teaching in any department is the oral and written response of the pupils when participating in class. That this practice-work may attain the quality requisite to merit the stamp of efficiency it is necessary to set for it high standards. Skill in the art of English expression is attained only by practice under painstaking and intelligent guidance, and then only when the pupils are actuated by clearly understood standards and trained habitually to conform to these standards.

The following is an attempt to state the standards necessary to be maintained in every high school which merits recognition:

1. *A Definite Standard.* The minimum acceptable oral and written response in class-work, creditable in the high school is the paragraph. High school pupils must be trained to attain paragraph-consciousness, wherewith they habitually converse, recite, think, read, and write. It is for the elementary school to instill in the pupils sentence-consciousness. The eighth grade pupil should be accomplished in the simple art of sentence-expression, with its technique of subject, predicate, object and their respective modifiers. The high school advances this training to the next higher degree. The pupils easily build upon the details of sentence-consciousness the super-structure of paragraph consciousness.

2. *Paragraph Consciousness Imperative.* The high school teacher needs to be so accomplished as to be peculiarly sensitive to sentence and paragraph-construction. Without effort of attention, his paragraph-consciousness should be alert to observe paragraphic merit, and to detect paragraphic flaws. He can intensify his discernment in this regard by inviting his pupils to watch for paragraph-consciousness as reflected not only in each other's constructions, but also in their teacher's expressions. It is advisable for teachers, not specially trained in English teaching, to compile from the adopted composition text of the school a ready reference sheet containing the author's presentation of the oral, written, descriptive, narrative, explanatory, and argumentative paragraphs. This diffuses among all the teachers the common knowledge which the English teacher has used in training the pupils.

3. *A Keen Motive.* The sense of having completed a worthy product, as evidenced by the pupil whose manual training skill has produced a finished piece of his handicraft, should similarly envelop the pupil whose mental training skill has produced a finished piece in a paragraph which he has built well. The common class-reluctance in English expression is mainly due to the fact that the pupils have not realized the thrill that accompanies dexterity in this type of accomplishment. Why not bring the pupils to realize that no gifts or attainments will make room for them as readily and as surely as will the accomplishment of an educated, skillful mastery of oral composition; that practice in the oral response in class is the best opportunity for personal training in the fine art of accomplished speaking to few or to many persons?

4. *The Development of Natural Resources.* The indispensable tool of the mind is the paragraph. To be able to think, to speak, and to write in para-

graphs readily starts the mind to pick up its own specific power. The foresight to look forward through the introductory sentence, which states the thought to be amplified, along the developing, explaining, exemplifying, and illustrating sentences, straight toward the consummating and summarizing sentence at the close of the paragraph is absolutely necessary. Without this adequacy the pupil will repeatedly kill his mental engine. Through the attainment of paragraph-efficiency the pupils will realize that they not only can run on their own power, but also may realize that they have great stores of power of which they hitherto were not apprised.

5. *A Corrective in Methods.* Not until we install a stenographer in each class-room faithfully to take the teachers' talking and the pupils' responses will we actually know (1) what proportion of time is occupied by the teacher and what by the responding pupils; and (2) what is the quality of the pupils' responses according to English standards. However, it is certain that, as soon as the paragraph is adopted in any high school as the minimum creditable response, it becomes necessary for the teacher to cease "telling" subject matter to the pupils and to start teaching according to a more approved standard. When we realize how hard it is for the high school teacher to break his "telling" habits in class-room procedure—with its continuous running discourse occasionally interrupted in order that some pupil may interject a fragmentary improvisation—we may realize how the requirement of a paragraph as the minimum unit of pupil-response will necessitate a re-placing of emphasis in class-room participation.

Many high school teachers fear the charge of "hearing lessons". They assign lessons for their pupils to study; but when the pupils report to the class-room, they find little occasion for having studied the assignment. The teacher does most of the reciting. The pupils are expected to pay attention. They could have learned the lesson by studying the author's presentation. They readily adopt the listening and non-studying reaction. The requirement of the pupil's response, cast in a paragraph, should correct this makeshift. If, during forty minutes, ten to fifteen pupils are to fashion paragraphs, the teacher's reciting will be crowded out through sheer lack of time for it. Then he will be compelled to program a higher and more efficient form of teaching technique.

6. *A Type of Appreciation.* Is it not possible to occasion in the pupils a keen realization of the worth to them of a high degree of attainment in oral expression? Can pupils not be awakened to understand that mental activity becomes a chief source of joy when facility in expression has been achieved? The chief cause of intellectual sluggishness is the obstacles that are due to untrained aptitude in self-expression. The best type of appreciation attainable by pupils is that which is based upon the abiding convictions that self-improvement in the specific lines of facility and efficiency in self-expression is of the greatest importance as a source of personal pleasures and satisfactions. What joys result from achievement in coordination of muscular activity involved in walking! No child is willing to return to crawling after having learned to walk. A thousandfold more delectable are the joys that are possible upon attaining the corresponding achievement which similarly facilitates untrammelled intellectual activity! What additions to vision attend the seeing which freely unlooses the associated intellectual activity when the eyes of the mind become wide awake to see! In proportion as real seeing is largely thinking, training in composing our thinking heals our near-blindness. Certainly the hope of gaining an entrance into the realm where the mind's chief treasures may be realized and utilized should awaken an appreciation such as has not been dreamed of in the former conceptions.

7. *A Conference Aim.* What wonderful power to bring reforms to pass resides in this section of the conference! Suppose all the English teachers in attendance should succeed in establishing in all their local schools the standard of the paragraph as the minimum acceptable class-room response. Suppose there should also be secured, throughout the whole staff in each school, definite



and effective cooperation in English training; then would the high schools in Illinois become noted for the excellence of their English training. The present situation is highly favorable for such advance!

Mr. Andrews's paper was discussed by Professor Paul, who, after endorsing Mr. Andrews's idea of the value of developing the "paragraph-habit of consciousness," maintained that the student must be made to feel that better every day English is worth while, if for no other reason, than that one's use of English determines one's social status. Questioned how better English could be enforced in other English class rooms of the high school, Mr. Andrews answered that it could not be *enforced*—that it could only be *popularized*.

The final paper of the session was "An Experiment in Criticism" by Miss Isabel McKinney. Properly speaking Miss McKinney's was not a paper at all, but a cleverly conducted discussion of the following:

#### *Topics for Discussion*

1. What are *minimum* essentials?
2. Are *minimum* essentials desirable?
3. If so, what shall they be for the ninth year? (See the October Bulletin.)  
For the tenth year?
4. If adopted, how shall they be enforced
  - a. in some hypothetical cases:
    - (1) if a boy hands in a theme perfect except for one mistake in *minimum* essentials.
    - (2) if a girl who has written well all the year becomes careless during the last few weeks and makes mistakes in *minimum* essentials.
    - (3) if a girl hands in a theme in perfect form but without a semblance of thought.
    - (4) if a boy writes an interesting theme without a mistake in *minimum* essentials, but also without regard to the problem set.
  - b. in general:
    - (1) required only in work prepared outside?
    - (2) required in all work for English classes?
    - (3) required throughout the school, with the cooperation of all teachers?
    - (4) required without exception or excuse?
5. Will the enforcement of *minimum* essentials place undue emphasis upon matters of form?

The attendance upon the Conference was somewhat larger than ever before, so large indeed, as to justify the prediction that for next year's meeting a larger room will be required. Possibly out of consideration for the visiting teachers, and in view of the limited seating capacity of the Moot Court Room, the forty-five members of the University department of English mostly stayed away. Except for the three members of the department whose duties required their presence, only two attended the sessions of the Conference. Such abstinence on the part of those whose work is vitally related to that

which the visiting teachers were discussing was felt to be a matter for sincere regret.

Edward Chauncey Baldwin,  
Secretary.

## GEOGRAPHY SECTION

### Morning Session

The meeting of the Geography Section opened with Dr. Rich presiding. After announcements had been made, the chairman put before the section the question of having three members instead of five on the executive committee as it would be easier to hold meetings and also would be less expensive.

Mr. Large of Joliet moved that no member be elected this year, and that only one be elected next year, in order to reduce the number to five. Seconded. Carried.

The method for electing the chairman and secretary of the executive committee was discussed.

Miss Weller of Charleston moved that Dr. Rich continue as chairman, and that the committee select its own secretary. Seconded. Carried.

The report of a committee appointed to prepare a syllabus for a two years' course in Geography was given by Principal William E. Andrews of Pana.

Mr. Andrews spoke of the condition of Geography in the High School and urged that the subject of Geography be made a major high school subject. He reported that the committee adopted for the first year's work in Geography, the syllabus, prepared by a committee of the Geography Section of the High School Conference of 1913. Concerning the second year's work, Mr. Andrews spoke as follows:

The present committee on a syllabus for a year-course in tenth-grade geography presents in outline a tentative statement of its findings. Only the first part of the syllabus has been worked out in detail by the committee in session. The latter parts have been assigned to different members of the committee to be worked out independently and later to be considered in meetings of the committee. The committee advocates (1) two year-courses in high school geography; (2) these to be given by a special trained teacher and not passed around as unwelcome additions to the burdens of some teacher who has been selected to teach other special subjects; (3) the first year-course definitely to be physiography; (4) the second year-course definitely to be human geography specifically based upon physiographic causation.

*The General Aim of the Advanced Year-Course.*—The committee aims to program such a course as will intensify the high school pupils' realization of the significance in human affairs of geographic conditions. The essential cement of the course is causal relationships. The course as outlined is far removed from the conception of "year-book" geography. The committee does

not advocate using the high school pupil's mind as a fact-rack. Accepting the earth's surface as composed of various types of physiographic regions—each the product of definite physiographic factors—each under typical physiographic controls—the committee selects an arrangement of these regions for a series of studies in human relationships as definitely dependent upon the physiographic conditions. The core of the course is human dependence upon physiographic causes and conditions.

*The Physiographic Region the Typical Subdivision.*—The committee recognizes the confusing number and variety of relationships in geography. Unless the term geographic environment of man is definitely characterized, human relationships thereto are in hopeless and irrational confusion. The conception of the physiographic region as the basic division designated for study eliminates this vagueness. Such a region possesses a definite number of physiographic conditions with which human activities react in characteristic ways. The interaction between a typical group of physiographic conditions and the human adjustments constitute a body of knowledge of definite scientific character. The rational connections between definite physiographic factors and special phases of human activity become the warp and woof of the organization of the knowledge designated by the committee as human geography.

*Disposal of the Other Bases.*—The committee is not unmindful of the many other threads of continuity in geography. It accepts regional physiographic causation as providing the basic ideas of the course because of the possibility presented better to organize the knowledge in a scientific manner. Regional geography based upon grand divisions and on political subdivisions of the earth's surface belongs by general consent to the elementary school. High school geography based upon the various types of surface productions with their related industries and consequent commerce is well suited for a supplementary course in a commercial department. The committee proposes a course which is definitely advanced geography, the consummation of high school geography, and not a supplementary course for another department, or an advanced review of the work done in the elementary school.

*"There is No Suitable Text Book."*—The committee is frank to confess that, if there were a satisfactory text for a year-course in tenth-grade human geography based upon physiographic causation, there would be no need for the work which the committee has undertaken. The committee cares little to compile a syllabus of a course already worked out in a text book. It has addressed itself to the pioneer task of advocating and outlining a year-course in human geography based upon definite aims and prescriptions. It has sought to mobilize the choicest of geographic subject matter for immediate use in the present menace which would subordinate this most valuable subject. In the basic ideas of the syllabus the committee offers a definite conference platform which may become the rallying center of the geographic advocates in our high schools.

Furthermore, when we survey the scant work done in other states upon this line of study, the committee presents the signal opportunity for this section of the conference to place the high schools of Illinois in the front rank in recognition of the worth in education of high school geography.

*Create the Demand.*—The committee resolutely undertakes to present a course for which the high school teachers of geography are expected to intensify the demand. In many schools at present perhaps there may be little demand for the course. To remedy this condition is the urgent duty of all who are in a position to contribute toward the aim of the committee. The present flexibility of the high school program of studies offers peculiar facility for the introduction of the proposed course. The readiness with which high school students respond to suggestions regarding their course of studies provides the entering wedge. Your advocacy in the local staff and in your other classes will bring results. If the teachers of geography realize the eminent worth of



their subject and their opportunity to advance its place in the local program of subjects, the course will not have been devised in vain.

The discussion which followed showed a marked difference of opinion and a spirited debate followed. The committee had selected a series of regional physiographic types and planned to show how each of these exerted a control over the life of its inhabitants. A brief study of similar types was added to each one of the series. Those opposed to the plan of the committee urged that the United States be studied first in a thorough manner, according to its physiographic regions and then other countries might be studied more briefly in a similar way.

Miss Weller moved that the report of the committee be laid on the table until the afternoon session. Seconded. Carried.

#### Afternoon Session.

Miss Stark of Normal spoke to the section about the work and the coming meeting of the Illinois Council of Geography Teachers.

Mr. J. M. Large of Joliet gave a report of a committee appointed to prepare "A List of Books on Geography for a High School Library".

Mr. Large gave the following report:

#### MINIMUM LIST FOR ILLINOIS HIGH SCHOOL LIBRARIES. (Provisional.)

1. As many as possible of the following elementary texts on Physiography and Physical Geography:
  - Physiography (Briefer Course), Salisbury.
  - Elements of Physical Geography, Hopkins.
  - Physical Geography, Dryer.
  - High School Geography, Dryer.
  - Physical Geography, Tarr.
  - Physical Geography, Davis.
  - Physical Geography, Gilbert and Brigham.
  - Physical Geography, Redway.
2. Elements of Geography, Salisbury, Barrows and Tower.
3. Commercial Geography, Brigham.
4. Commerce and Industry, J. Russel Smith.
5. Interpretation of Topographical Maps, Salisbury and Atwood. Professional Paper 60, U. S. Geological Survey.
6. Commercial Raw Materials, Toothaker. Ginn & Co.
7. Soils, King.
8. Elementary Astronomy, Todd's or Young's.
9. Mathematical Geography, Johnson.
10. Geology, Norton, or Blackwelder and Barrows.
11. Climate and Meteorology, Harrington's "About the Weather", Ward's Climate; Davis, Meteorology; Waldo, Meteorology.
12. International Geography, Mill.
13. Essentials of Geography, Brigham and McFarlane. (To be used chiefly as an Atlas.)

14. Geographical Influences on American History, Brigham.
15. Conservation, Van Hise.
16. Man and His Work, Herbertson.

A Longer List of References for Larger High Schools and Other Schools desiring a More Complete Reference Library. Those starred are regarded as most suitable for schools that cannot get all of these books.

#### *Physiography.*

- \*Physiography, Advanced Course, Salisbury. H. Holt.
- Geographical Essays, W. M. Davis. Ginn & Co.
- Physiography of the United States, Monographs. American Book Co.
- Forest Physiography, Bowman. John Wiley & Sons.
- \*Rocks and Minerals, Fairbanks.
- Common Mineral and Rocks, Crosby. D. C. Heath & Co., \$.60.

#### *Geology.*

- \*Elements of Geology, Blackwelder and Barrows. American Book Co.
- \*College Geology, Chamberlain and Salisbury. H. Holt.

#### *Meteorology and Climate.*

- Our Own Weather, E. C. Martin.
- \*Meteorology, Milham. The Macmillan Co., \$4.50.
- Physical Atlas, Vol. III—Meteorology. Bartholomew.
- Descriptive Meteorology, Moore. D. Appleton & Co., \$3.00.
- The Weather of Chicago, Cox and Armington. Univ. of Chicago Press, \$3.00.

#### *Mathematical Geography.*

- \*Mathematical Geography, W. E. Johnson. American Book Co., \$1.00.

#### *Regional, Physical, Political, and Descriptive Geography.*

- The Nearer East, Hogarth. D. Appleton & Co., \$2.00.
- India, Holdich. D. Appleton & Co., \$2.50.
- The Far East, Little. D. Appleton & Co., \$2.00.
- Britain and the British Seas, Makinder. D. Appleton & Co., \$2.00.
- Central Europe, Partsch. D. Appleton & Co., \$2.00.
- \*North America, Russel. D. Appleton & Co., \$2.00.
- Rivers of North America, Russel. Putman's, \$2.00.
- Lakes of North America. Ginn & Co., \$1.50.
- Glaciers of North America, Russel. Ginn & Co., \$1.75.
- Australia, Physiographic and Economic. Clarendon Press, \$.90.
- South America, Bowman. Rand, McNally & Co., \$.75.
- Asia, Huntington. Rand, McNally & Co., \$.75.
- \*New Geography, Book II, Tarr and McMurray. The Macmillan Co.
- \*Essentials of Geography, Brigham and Macfarlane. American Book Co.
- Modern Geography, Newbigin. H. Holt & Co.
- \*Atlas of Canada, Minister of the Interior, Ottawa.
- \*Geography of Chicago and its Environs, Salisbury and Alden. University of Chicago Press, \$.35.
- Campfire in the Canadian Rockies, Hornaday. Scribners.
- Campfire on Desert and Lava, Hornaday. Scribners.
- Our Southern Mountaineers, Kephart.
- African Game Trails, Roosevelt. Scribners.
- \*The States of Central and South America, Enoch.
- The Story of the Great Lakes, Lansing.

#### *Commercial Geography.*

- \*Handbook of Commercial Geography, Chisholm. Longmans, Green & Co., \$4.80.

- \*Commercial Geography, J. Russel Smith. H. Holt.
- Physical and Commercial Geography, Gregory, Kellar and Bishop. Ginn & Co.
- Man and His Markets, Lyde. The Macmillan Co., \$.50.
- From Trail to Railway, Brigham.
- \*Ocean and Inland Water Transportation, Johnson. D. Appleton & Co., \$1.50.

#### *Commodities and Industries.*

- \*The World's Commercial Products, Freeman and Chandler.
- Commercial Raw Materials, Toothaker.
- The Book of Wheat, Dondlinger. The Orange Judd Co., \$2.00.
- The Cereals in America, Hunt. Orange Judd Co., \$1.75.
- The Story of Iron and Steel, Smith. D. Appleton & Co., \$.75.
- The Story of Paper Making. Butler Paper Co., \$1.25.
- The Story of Sugar, Surface. D. Appleton & Co., \$1.00.
- The Story of Oil, Tower. D. Appleton & Co., \$1.00.
- \*Industrial Studies: United States, Allen.
- Industrial Studies: Europe, Allen.

#### *Atlases.*

- \*Essentials of Geography, Brigham and McFarlane. American Book Co.
- \*Schul-atlas, Diercke.
- \*New School Atlas. Longmas.
- \*A School Economic Atlas, Bartholomew.
- Various Atlases by Rand, McNally & Co.
- Atlas of World's Commerce, Bartholomew.
- Comparative Atlas, Bartholomew.

#### *Miscellaneous.*

- Plant Geography, Schimper. Oxford University Press.
- \*Plant Societies of Chicago and Vicinity, Cowles. University of Chicago Press, \$.50.
- Animal Geography, Newbigin. Oxford University Press.
- \*Animal Communities in Temperate America, Shelford. University of Chicago Press, \$3.00.
- The Races of Europe, Ripley. Appleton.
- The Men of the Old Stone Age, Osborne. Scribners.
- The Passing of the Great Race, Grant. Scribners.
- \*Semple, American History and Its Geographic Conditions.
- Semple, Influence of Geographic Environment.

#### *Resources.*

- \*Soils, King. Macmillan.
- \*Soil Fertility and Permanent Agriculture, Hopkins.
- \*Trees of North America, Hough.
- \*Conservation of Natural Resources in the United States, Van Hise. Macmillan Co., \$2.00.
- Irrigation, Newell. T. Y. Crowell & Co., \$2.00.
- Irrigation and Drainage, King. Macmillan Co.

#### *Statistics.*

- World Almanac.
- Statesman's Yearbook, \$3.00.
- Statistical Abstract of Foreign Countries, \$0.50.

#### *Wall Maps.*

- Goode's Series. Rand, McNally & Co.
- Johnston's Series. Nystrom & Co.
- Johnston's Commercial Map of the World. Nystrom & Co.



*United States Government Publications.**By U. S. Geological Survey.*

- Bulletin 394. Papers on the Conservation of Mineral Resources.  
 Bulletin 599. Our Mineral Reserves.  
 Bulletin 422-A. Alaska Coal and its Utilization.  
 Mineral Resources. Mineral Resources of the United States. (Annual.)  
 Water Supply Paper 234. Conservation of Water Resources.  
 Water Supply Paper 255. Underground Water for Farm Use by Myron L. Fuller.  
 Water Supply Paper 239. Quality of the Surface Water of Illinois, by W. D. Collins.  
 Bulletin 274. Dictionary of Altitudes in the United States.  
 Yellowstone National Park Folio.  
 Monograph XXXVIII. The Illinois Glacial Lobe, by Frank Leverett.  
 Monograph XLI. Glacial Formations and Drainage Features of the Erie and Ohio Basins, by Leverett.  
 Monograph LIII. The Pleistocene of Indiana and Michigan and the History of the Great Lakes, by Leverett and Taylor.  
 Professional Paper 71. Index of Stratigraphy of North America, by Bailey Willis. (Contains Geological Map of North America.) (Supt. of Documents.)  
 Professional Paper 60. Interpretations of Topographic Maps, by Salisbury and Atwood. (Supt. of Documents.)  
 Professional Paper 72. Denudation and Erosion in the Southern Appalachians, by L. C. Glenn. (Supt. of Documents.)  
 Guide Books. Of Western United States.  
   Part A. The Northern Pacific Route.  
   Part B. The Overland Route.  
   Part C. The Santa Fe Route.  
   Part D. The Shasta Route and Coast Line.  
 List of the Publications of the United States Geological Survey. (Free.)  
 Address the Director of U. S. Geological Survey.

*From United States Department of Agriculture.*

Year Book of the Department of Agriculture. (Annual.)

*Forests.*

- Forest Service. Bulletin 83. Forest Resources of the World, by Raphael Zon. (Supt. of Documents.)  
 Farmers Bulletin 173. A Primer of Forestry. Part I by Pinchott.  
 Farmers Bulletin 358. A Primer of Forestry. Part II by Pinchott.  
 Forest Service Circular 116. The Waning Hardwood Supply and the Appalachian Forests, by William L. Hall.  
 Forest Service Circular 129. The Drain Upon the Forests.  
 Forest Service Circular 159. The Future Use of Land in the United States, by Raphael Zon.  
 Forest Service Circular 166. The Timber Supply of the United States.  
 Forest Service Circular 167. The Status of Forestry in the United States, by Cleveland.  
 Forest Service Circular 171. Forest of the United States. Their Use.  
 Forest Service Circular 143. The Relation of the Southern Appalachians to Inland Water Navigation.  
 Forest Service Circular 144. The Relation of the Southern Appalachians to the Development of Water Power.  
 Forest Bulletin 117. Forest Fires. Their Causes, Extent and Effect.  
 Forest Bulletin 44. Diminished Flow of Rock River in Wisconsin and Illinois and its Relation to Surrounding Forests.  
 Forest Bulletin 17. Check List of Forest Trees of the United States.

*Forest Maps.*

- Wall Map of the United States Showing Original Forests.
- Wall Map of the United States Showing the National Forests.

*Bureau of Soils.*

- Bulletin 85. A Study of Soils of the United States.
- Soil Survey of Various Areas. Especially of your county if published.
- Office of Experiment Stations—Circular 76. Swamp and Overflowed Lands in the United States, Their Ownership and Reclamation.
- Weather Bureau—Bulletin V. Forest Data of the United States. Length of Crop Growing Season from the Average of the Latest and Earliest Dates of Killing Frosts.
- Alaska Agricultural Experiment Station's Report—Annual. (Supt. of Documents.)
- List of Publications—Secretary of Agriculture.

*Publications of the Department of Commerce.*

- Statistical Atlas of the Thirteenth Census.
- Statistical Abstract. (Annual.)
- List of Publications—Secretary of Department of Commerce.

*Illinois State Publications.*

- From the State Geological Survey. F. W. DeWolf, Director, Urbana, Illinois. Educational Bulletins.
  7. Physical Geography of the Evanston—Waukegan Region. Atwood and Goldthwait.
  11. The Physical Features of the Desplaines Valley, Goldthwait.
  12. The Mississippi Valley Between Savanna and Davenport, Carmen.
  13. Physiography of St. Louis Area. Fenneman.
  15. Geography of the Middle Illinois Valley, Barrows.
  19. Geology and Geography of the Wheaton Quadrangle, Trowbridge.
  26. Geology and Geography of the Elizabeth and Galena Quadrangle, Trowbridge, Shaw and Shockel.
  27. Geography of the Upper Illinois Valley, Sauer.
- Geological Map of Illinois.
- Base Map of Illinois.
- (See List of Publications for prices on above.)

*From the College of Agriculture.*

- Bulletin 123. The Fertility of Illinois Soils.

*Soil Map of Illinois.*

- List of Publications.

*From the Secretary of State, Springfield, Illinois.*

- List of Publications. (Free.)
- Illinois Blue Book.
- Annual Coal Report.
- Bulletin of Rivers and Lakes Commission.
- List of Publications.

Mr. Bonnell of Harrisburg spoke and illustrated with lantern views on the subject "The Variety of Geographical Material Available for Teaching Physiography as Found in a Few Counties of Southern Illinois". Mr. Bonnell's excellent paper is given below and the committee regret that the illustrations cannot be made a part of the report.

The Variety of Material Available For Teaching Physiography As Found in  
A Few Counties of Southern Illinois.

By Clarence Bonnell

Harrisburg Township High School  
Harrisburg, Illinois.

Mention of Southern Illinois, especially of that part lying in the two southern tiers of counties, to an audience from that part of the state lying north of St. Louis, calls up in the minds of that audience as many images as the blind men had when seeing the elephants. The larger the audience, the greater number of pictures. The picture may be one of swamps, mountains, floods, canons, tunnels, rich farm lands, rocky hills, rushing torrents and cascades, sluggish meandering streams, drought, rain unceasing, perfect autumn weather, or fruit killing April frosts, all depending upon where and when the observer got his glimpse of this varied and somewhat neglected part of a state popularly supposed to be made up almost exclusively of monotonous prairie. This part of the state has a climate rivaling that of Chicago for variety and sudden changes. Here, the storms from the Gulf and the cyclones from the northwest, at times, exert their influences at once, then alternately, with sudden and unexpected changes that baffle the weather man to explain, much less to predict. Here grow the cypress and mistletoe and cane brakes of the further south by the side of the cedar, the hardy oak, and almost every other tree and shrub that grows near the northern border of the state. Here, the gooseberry thrives in the shade of the persimmon, the violet sometimes blooms in January, and the wild duck sometimes makes its winter home.

In the counties of Saline, Gallatin, Hardin, Pope, Massac, and Johnson, the variety of physical phenomena is not equaled by any equal area in the state. Two or three other counties to the west are probably of equal interest but their features are not so familiar to the writer.

The Ohio River on the southern border alternately cuts through highlands and crosses lowlands. A fair sized river as it passes historic Shawneetown protected from its might by the great levee except in time of excessive floods, it sweeps on past Elizabethtown half asleep in its security, safe, but not high, above the floods, and cuts through the Ozarks past the lovely little city of Golconda, county seat of Pope county, set in between two high hills and straggling up their very precipitous slopes. Not far below, the Cumberland joins it and the Tennessee at Paducah, forming a stream that rivals the Mississippi in size. Such is its magnitude that the great bridge now being built at Metropolis is given by one authority as one of the ten greatest engineering projects of the present decade.

Near the Ohio and its tributary, the Wabash, lie strings of lakes, the remnants of former meandering channels. Some of these, easily reached from Shawneetown, have become places of resort for the people of several counties. Two other tributaries, Bay Creek and the Cache River, flow in opposite directions from their common source in the Cypress swamps of Massac county; but occupy with the swamps the old bed of a river overlooked by high bluffs and with a valley large enough to carry the Ohio of today. In fact, in times of flood, a distinct current flows up the Bay Valley, through the swamps, and down the Cache. The Saline river, except in its upper tributaries, sluggishly meanders through a rich farming country elevated but little above the Ohio.

The Ozark mountains, stretching across the State from Grand Tower on the west to near Shawneetown on the east, overlook these valleys, rising so abruptly that a change in nearly six hundred feet elevation may be made in a half hours climb. Along the Gold Hill axis in southeastern Saline county and at the Old Stone Fort a few miles to the westward, upheavals resulting in faulting and bending, followed by rapid erosion, have brought to view massive sandstones and limestones. These bluffs, topped with the conglomerate sand-



stone or Millstone grit, command a view of the whole country. Weathering has produced curious forms and many overhanging ledges. Strata, tilted as much as 40° in places, tell the story of the mighty forces at work in the past. In the elevated limestone section of Eagle Cliff (the Prospect Hill of Worthen) the entrance to a cave commands the view of a large part of two counties. This cave probably had its origin in the upheaval which opened cracks which have since widened into extensive chambers as the limestone dissolved. The explorer may penetrate nearly a quarter of a mile in each of two directions with no one to guide him back if he will remember that the strata in this block mountain always slope to the east and south.

Standing here in the Sub-carboniferous formations above the cave mouth, the view for twenty miles to the northwest is of a rolling plain lying several hundred feet below,—a plain covered with glacial drift almost to the foot of the hills and underlaid with two thick coal seams and several thin ones, the true coal measures, the richest in the state. Frequent slips, revealed in almost all of the nearly two score mines whose smoke darkens the sky as seen from this eminence, testify to the wide extent of the disturbance which heaved this and other mountains of rock from their beds in this region, to look out upon the advancing glacier as it came to the very foot of the mountain, wavered, and then retreated leaving a thin sheet of drift and small boulders, small as compared with those scattered over the prairies of northern Illinois but glacial material, nevertheless.

From this point south through Hardin and Pope counties, massive cliffs and ridges, the result of upbending and occasional faulting of the rock as the Ozark plateau was elevated and then dissected, are always in view. In fact, this condition exists all the way from Shawneetown to the Mississippi on the west over a strip varying from ten to twenty-five miles in width.

An extensive limestone region near Elizabethtown in Hardin county is honeycombed with subterranean passages, as is evidenced by the numerous sink holes, some of which are obstructed at the outlet and now form small lakes and ponds. One such passage opens into the river bluff at Cave-in-Rock and forms the famous cave about which clusters so much tradition and some of the early history of the region. The enterprising manufacturers of St. Jacob's Oil, years ago, painted their sign in six foot letters above the entrance to attract the eye of the traveler on passing boats. Though obstructed by a sink hole one hundred and fifty feet from the mouth, the arched entrance and rocky walls make it a wonder to those who do not read among the names carved and painted on the walls, the deeper written story of its origin.

This Ozark region is much as nature left it so far as physical features are concerned. The heavy hardwood forests which covered it have nearly all been cut over once, but many trees are left and the second growth has grown large where left undisturbed. Broad wheat fields cover the level ridge tops and fertile corn fields the little valleys. Many parts are too stony and steep for cultivation. When the crowding of population makes it necessary, many of these now worthless slopes will yield a fair return in response to intensive cultivation. The iron deposits, worked in war times, lie too far from railroads and river for exportation of the ore. The greatest fluor-spar mines in the land at Rosiclare and Fairview are only partially developed. Ranges of close textured sandstone and of cement limestone lie yet untouched. The cement industry is just now promising to develop at Golconda on the river. The two thick veins of coal in Saline and Gallatin counties, though they afford labor for several thousand miners, are scarcely disturbed as yet. Man will destroy and carry away in centuries but a small fraction of what Nature by herself has already destroyed of her own handiwork by the agency of erosion, as is displayed by the numerous cañon like valleys among these hills. Grand Pierre Creek from source to mouth is worthy of a weeks study of erosion. In one corner of Saline county alone, up the rocky stream bed of Mud Spring Hollow, and then down the valley of Little Eagle Creek, in a single days tramp, the student may see within these narrow walls the work of the forces which have made the mighty Rockies of the west.

Perhaps nowhere in the state is the enormity of Nature's work in depositing great quantities of rock better shown than in this vicinity, at Womble Mountain, a mesa like rock of reddish sandstone having an area of about ten acres, being split diagonally across, displaying fore-set beds and other evidences of shore lines, and standing far above the surrounding valleys. The even sky line as seen looking from it across twenty miles of the Ozark hills into Kentucky, together with the corresponding strata across the valleys, make it clear to the high school student that these same valleys once filled with strata of rock laid down under the sea and then elevated have been carved out by running water and that the process still continues.

The perpendicular walls of this mesa show two degrees of weathering, one of long continuance giving a long talus slope on all sides with "slide rock" such as Hornaday describes in the Canadian Rockies, and another more recent where huge blocks have fallen off and rolled down the talus slope. One of these 225 feet in circumference and 35 feet high locally known as "Table Rock", has slid down a hundred feet, remaining horizontal. The east and south sides show little weathering as does, also, the corresponding niche in the cliff above from which it came, while the west and north sides are rugged as is the undisturbed portion of the cliff. Large trees grow between this block and its former position. There is nowhere much evidence of gradation between these two ranges stages of weathering over a carefully studied region extending over three counties. Examination of many blocks rolled off from the cliffs, shows there is always the absence of weathering on the side where the cleavage occurred while the old outer side is always badly worn. In nearly all cases, trees, as much as from ten to fifteen inches in diameter, are standing in the path taken by the fallen rock, which indicates that these falls occurred sometime before these same trees began to grow. These facts, together with the fact that in this hill region of Illinois and nowhere else, so far as has come to my knowledge, there is common knowledge of a traditional nature among the native stock of hill dwellers of the great New Madrid earthquake of 1811-12, has led me to question whether there might not be some connection between that earthquake and these huge falls of rocks.

Let us shift the scene some fifteen or twenty miles to an especially interesting area in Pope county about three miles west of Eddyville. Follow me for a day for an eighteen mile drive starting before daylight from Stonefort or a ten mile drive from Ozark or Simpson to the vicinity of the Belle Smith Spring. The nearest way is to follow the rocky stream bed of Hunting Branch for three miles to its junction with Bay Creek near the spring which is not remarkable except that it is near a popular camping place. A better way is to drive over a good road to the head of Clarida Branch and pitch camp near the cool waters of Clarida Spring which is only a few hundred feet from the head of the valley. Here the water, for a few minutes only after a rain, flows in a cataract from an extensive rock basin above, over the cliff which overhangs as much as thirty feet. Just beyond this cascade, we climb upon fallen rock masses onto the "Indian Ladder", a cedar trund which has, upon well authenticated evidence, remained loose in this position for three generations, and, according to tradition, was there when the first white men came.

Come with me over the ridge to the left of Clarida Branch to another valley and enter the great "Sand Cave", a dome shaped room in the solid sandstone cliff whose interior dimensions are 142' x 116' and whose arched roof is fifteen feet high. A large drove of horses, mules and cattle finds shelter here from cold in winter and from heat in summer. Situated near any large city, it would yield a small fortune as a dancing hall, always dry, always cool, but never cold. Along the curving cliff in which this cave is situated, in most places, the softer rocks below have disappeared leaving an overhanging cliff. But close to the cave opening, the overhanging cliff has fallen and lies a crumbling mass on the slope below, leaving the new face of the cliff smooth and unweathered as in the

other cases mentioned in connection with the theory that all these apparently recent falls were due to the earthquake. And the trees have grown since the cliff broke away.

Back over the ridge and on down Clarida Branch, we pass toadstool formations imitating those in the Garden of the Gods but mostly hidden in the thick brush. A balanced rock 40 feet by 50 feet and 35 feet high stands on a triangular base only twenty by twenty by ten feet, but is too densely hidden by trees and shrubs to be photographed.

Clarida Branch joins Bay Creek near the Belle Smith Spring. Bay Creek, after it leaves the hills and enters the old river valley, for thirty-three miles, is very sluggish and muddy and has a current up stream in flood time as mentioned before. In the upper seven miles of its course, it has a fall of three hundred feet and is clear and bordered by perpendicular bluffs. A few hundred feet above where it is forded at the mouth of Clarida Branch, the left bank has a steep slope to one of the characteristic curving bluffs. At one place this bluff was deeply undercut as was the bluff at the "Sand Cave", at Clarida Spring, and at many other places near. In fact, a cave had formed. But, the roof of the cave fell in and most of it was washed away so that the water from the slope above now falls over a new cliff further back and runs under a natural bridge whose arch is 26' wide, 16' thick, and whose surface is 24' from the bed below. The span is 150' in the clear.

On three occasions, we have tried to make the picture of this bridge. Though armed with the best of cameras we have failed of very great success, for it is too big and too high up the slope and has too many trees in front to be successfully photographed.

There is abundant illustrative material in these few counties for all the essential points in a high school course in physiography and, doubtless, there are many other localities in Illinois that could supply as much. We go to distant parts of the world for our illustrations of what lies about us unappreciated. I am not at all sure that it would be practicable to attempt to make a text for Illinois students, based on Illinois material. I once had much enthusiasm for such a thing. But I am sure that any teacher in any community can arouse an enthusiasm for the subject of geography by creating in his own mind an appreciation of the very common things near at hand. I have been over a good deal of Illinois and have never found a locality so void of natural phenomena that a book of interesting things might not have been written about it.

I was once told to travel from Grand Junction to Salt Lake City by night as there was nothing of interest to see on the way. I became so curious to see what such a country could be that I changed my plan and went by day light. And I spent one of the most delightful days that I have known, seeing those very things which my friends had warned me to avoid.

Discussion of the report of the Syllabus Committee was again taken up. Miss Southworth moved that the committee continue the preparation of the syllabus according to the plan already worked upon, as a preparation for further discussion at the next meeting of the Conference. Seconded.

Mr. Cox of Bridgeport moved to amend the motion by adding that the committee with others to be appointed work out a second outline, based on the idea of having one half year given to United States Geography and a second half year given to a similar study of the remainder of the world. Seconded. Carried.



Mr. F. W. Cox of Bridgeport, Ill., was announced as secretary of the executive committee.

The meeting adjourned.

## MANUAL ARTS SECTION

### Morning Session

The section was called to order at 9:10 A. M., Friday, November 24th, in room 410 University Hall, by Mr. A. P. Laughlin, Chairman. Edward J. Lake was appointed Secretary.

P. B. Woodworth, Lewis Institute, Chicago, described the development of concrete as a manual training medium. This description was illustrated by photographs of the work in process at Lewis Institute, and examples of completed work. Aside from the vocational value of work in concrete, Mr. Woodworth recommended it as offering a wide variety of problems in design with little added equipment over that required for wood work.

Professor Charles A Bennett, of Bradley Polytechnic Institute, Peoria, discussed "Three Typical Methods of Teaching the Manual Arts".

### Three Typical Methods of Teaching the Manual Arts.

By Charles A. Bennett.

Out of the experiences of the past thirty years of school instruction in the manual arts, there have come three more or less distinct and fundamental methods of teaching, namely, (1) the imitative method, (2) the discovery method, and (3) the inventive method.

Briefly stated the imitative method is as follows: Show the pupil how to do something by doing it in his presence. Explain to him every step in the process which he does not already know. Tell him why each step should be taken in a certain way. Explain any theory involved; answer his questions. Then tell him to do it himself. This method is the method of demonstration; it is deductive. It applies equally well to both class and individual instruction.

In sharp contrast with the imitative is the discovery method. In this the teacher shows the pupil the completed thing he is expected to make, but not the process of making it. He gives him the tools but does not show him how to use them. No demonstration lessons are given. Instead, he asks him to tell how he proposes to use the tools, and by what process he expects to produce the object. The teacher stimulates him to think. Exercising his curiosity and his resourcefulness, he is expected to discover, or rather, to re-discover the correct methods of using tools. The reasoning is largely inductive. The instruction is almost exclusively individual. In the imitative method the teacher tells or shows the pupil almost everything; in the discovery method the teacher tells or shows nothing. The teacher's constant effort in the discovery method is to develop rational thinking and this, he believes, will lead to good technique. He assumes that there is a discoverable, rational best way to do everything.

The inventive method is different from both the imitative and the discovery methods in that it begins, not with something planned ready to make and materials all selected, but with a conscious need for something to serve a known purpose and a desire to make something to supply that need. The procedure by this method is, first, to know definitely the conditions to be met by the thing

to be made; second, to invent or design the thing to fulfill the conditions; third, to select materials and make the thing designed. From beginning to end the mind is centered on the thing being made and whether it will serve its purpose; the process of producing the thing, which in both the imitative and the discovery methods is given greatest emphasis, is here given secondary consideration. The instruction is largely individual, though the problem may be presented and discussed in class. It consists in supplying ideas from which the pupil may choose; it stimulates original thinking by questioning, by criticism, and by the statement and exposition of laws and principles.

### I—The Imitative Method.

Imitation is instinctive, and the teacher who does not utilize this natural force fails to avail himself of one of his strongest allies. Writers of psychology have made this clear. Professor Bagley says, "It seems to be a fundamental law of psycho-physics that an idea or a perception always tends to work **itself out in action**; the child's concrete experience of witnessing a given process is applied instinctively in repetition of that process." (Bagley: *The Educative Process*, page 239). Professor Thorndike points out that one of the chief dangers in teaching the doing of things is neglect of imitation. He says: "Young children rarely, if ever, learn well such things as how to hold a pen or to cut or to sew by being told how; they have to be shown how." (Thorndike: *The Principles of Teaching*, page 221). This is in accord with the experience of every teacher of handwork; he knows that the easiest and quickest way to get a boy to hold and use a tool correctly is to show him how to do it. Often it is not necessary to speak a word; to do the thing in his presence is sufficient. Again, Professor Bagley says, "The process of habit forming, once started by imitation, goes on by what may be called the method of trial and error."

"All school activities that we group under the head of manual training (including writing, drawing, sloyd, etc.) and moral training (cleanliness, industry, silence, etc.) are important from this point of view. Here the aim is to train the muscles to certain specific adjustments, and the only way in which this can be done is by imitation, trial and error, and persistent practice. The task of the teacher is to provide a good model in the first place, and then to keep the child constantly returning to the process, frequently comparing the results of his work with the model, until proficiency results." (Bagley: *The Educative Process*, page 243). If we can accept this as fact, then the imitative method is fundamental in all manual arts teaching.

In this connection, however, it may be noted that imitation, being an instinct, does not need development; it needs to be utilized or transformed or even eliminated, for only the desirable, the good should be imitated; the undesirable and bad should be eliminated, and imitation should be held in check in this direction. The child imitates what he admires, and so the teacher's opportunity lies in the direction of helping the child to admire skill and good proportions and fine finish and graceful curves and all the other good qualities that are essential to fine craftsmanship.

### II—The Discovery Method.

The discovery method is often spoken of as the heuristic method. This word heuristic comes from a Greek word which means "find out." According to Professor De Garmo this method involves (a) the discovery of the essential facts of a lesson and (b) the cause of a phenomenon or the law governing it. In this method the teacher surrounds the child with apparatus and atmosphere favorable to certain discoveries, and expects him to make the discovery. In its application to the teaching of the manual arts this method has found its most ardent advocates in Charles Bird, Supervisor of Manual Training in Leicester, England. With him it is largely a reaction against the machine-like method of extreme imitative teaching which leads to automatic action but fails to develop the thought power. In discussing his method Mr. Bird says:—

"It will hardly be denied that the normal child possesses in a marked degree such characteristics as curiosity, inquisitiveness, a love of prying into things, of questioning and doubting, which are frequently amusing and sometimes embarrassing. Of his originality, adaptability, resourcefulness, and independence there can be no possible doubt. It is these characteristics, so pre-eminent in their importance as assets in after life, which a reasonable system of educational handwork can stimulate and strengthen. It is greatly to be feared these characteristics have not been strengthened but rather weakened by the educational method of the past."

"For this purpose the children must be allowed to depend upon their own thought and judgment in doing things. If the work given be interesting in character, and not too difficult for mind and hand to fashion, surely the children may be allowed to exercise their whole powers upon it without let or hindrance; the cause is discoverable, and it is the business of the teacher to see that the children discover it. Let the children see, think, and do; later may possibly be time for explanation, surely not before. . . ."

"There is a discoverable reason why one method is better than another, if it is better; one tool more adapted to the purpose in hand than another, etc. If we wish the children to develop a reasonable judgment in all things, as we surely do, we must on no account discover for them what they discover for themselves. And what can they not discover?"

"Uniformity of method—in other words, the teacher's method—is not even desirable. What is wanted is that each child find its own method. If the children reveal themselves, the teacher can act from sure knowledge of strengths and weaknesses, of needs and necessities. Otherwise, if the teacher supplies the method, the children are robbed of their natural inquisitiveness and curiosity, and become mere storehouses of dead information. A little patience and a cheerful manner are all that are required to bring out the innate courage and capacity of the children, and cause them to attack their work with an intelligence, a vim, and a vigor delightful to observe."

In seeking to avoid the weaknesses of the imitative method the discovery method almost ignores a fundamental principle of habit formation, which is intended to avoid the formation of bad habits which must later be inhibited if good habits are to control. The study of a class at work under this system is sufficient to convince one that it emphasizes individual differences in children unduly. The pupils who come to the class prepared to think logically go ahead rapidly while those who have not that preparation and need the more fundamental imitative basis for their work go very slowly. As a matter of fact such pupils do imitate instead of think out the process. They have to; they have no power to do otherwise. If they are not allowed to imitate the correct method of the teacher they will imitate the incorrect method of the nearest fellow student, or if opportunity presents itself, of the student whom they know to be the best workman in the class. The imitation will take place whether the teacher wants it or not. In this respect the discovery theory cannot be strictly carried out in practice unless pupils are isolated. Moreover, it has a tendency to discourage the pupil who has not developed sufficient reasoning power. With all such students it is uneconomical of time and effort both on the part of the pupil and the teacher. On the other hand it does have certain advantages which have been pointed out by Mr. Bird.

### III—The Inventive Method.

From the standpoint of ultimate results the inventive method stands higher than the imitative because an inventor is regarded as more valuable to society than a mere imitator. On the other hand, society has need for many more routine skilled workers than inventors. In our present industrial organization most men must follow instructions; they must read a blueprint and produce work to given dimensions; they must do as they are told. Otherwise their product does not fit into the general scheme of production. Each workman's



piece must take just the place intended in the mechanism or his labor is of no value. Cooperation, then, in industrial work, which is the fundamental method of the factory system, must be secured, and this means that hundreds of thousands of workers must carry out the plan of one man who is the inventor or designer. Thousands of parts—even millions—must be made from one design. The power to read a blueprint is needed by a thousand workers where the power to design a piece of mechanism is needed by only one. The public school must not omit the fundamental preparation for the man who must take industrial orders, and obey. On the other hand, to stop with training to obey orders is to fall short of training for American citizenship. While the worker must have the ability to follow directions he must also, with his personal limitations, have the power of initiative. He should have power to think, and the skill to do things outside of the limitations of a routine job—even a job requiring skill.

The inventive method places the worker in an entirely different relation to the work than does the imitative method. It places him in the position of a master, of a person with authority and power to control. If a student is working from a blueprint or other working drawing given him by the teacher, he is expected to follow the drawing exactly in material and form and dimensions. On the contrary, if he has designed or invented the piece he is making, he is the guiding force in the work; he can change material or form or dimension. His own ideas are to be carried out, not those of some other man, except, of course, as he takes advice from the teacher. In this method then the teacher is more an inspirer, a counselor than a boss who makes demands.

#### IV—Summary.

Comparing the three methods, the imitative is the most elementary. It prepares for industry; it is economical. The discovery method is good in certain places, or in modified form, to follow the imitative. Alone, or as a beginning method, it is industrially weak. With the imitative as a foundation, it is good; it helps to make foremen and superintendents. The inventive method, also, is valuable after the imitative. It may produce inventors, designers, architects. It is sure to produce imitators instead of followers and mere obedient servants. Its chief weakness is that it may and often does ignore standards of construction and of technique. If the schools are to produce American citizens with (a) skill, (b) initiative and (c) power to think for themselves—those who can follow directions efficiently or can invent a better way, all three of these methods must be employed in teaching the manual arts in the schools.

#### Discussion

Chairman: The development of standards is the most important subject before this meeting. I have felt that the high school boys are the boys who make leaders in the community. We should give them an opportunity to develop leadership. Keeping order is very important. It is necessary to take care of tools, as they belong to the school, not to the boys. I have appointed one boy to watch after the clamps, to see that they are in proper place; another boy to oil up machinery; two boys to look after the tool case, and report shortage, or breakage. In so doing the boys become experts in looking after things. Developing a "straw boss" is very essential, and helpful to the boy. Let the "straw boss" plan some of the work. Avoid a narrow technical field, and develop the various branches.

Mr. Bennett: We are carrying on experimental work to find

methods of more carefully measuring teaching. At the present time we are trying to make a scale for various phases of mechanical drawing. A series of problems will be worked out in every class to get new facts concerning teaching. Would any one like to get a series of problems to work out, and cooperate with us?

Several teachers offered to cooperate.

Mr. Howell: In taking up these problems we need first of all definite information. We need data collected around the State. How do the Manual Arts correlate with other studies in the high school? How can other departments cooperate with us, and how can we cooperate with them? Are we employing proper psychological methods? What are the attitudes of Boards of Education, Superintendents, Principals, etc., toward our work? Can we sanction our shops being made into factories? Manual Training does not mean giving up vocational training, but correlation between educational and vocational purpose.

List of Books on Manual Training for a Small School Library.

Report of Committee on Text Books, A. C. Newell, Chairman of Committee.

*Benchwork in Wood*

- Correlated Courses in Woodwork and Mechanical Drawing, by Ira S. Griffith, Pub. by Manual Arts Press, Peoria.
- Design and Construction, by William Noyes, Pub. by Manual Arts Press, Peoria.
- Essentials of Woodworking, by Ira S. Griffith, Pub. by Manual Arts Press, Peoria.
- Fundamental Tool Processes in Woodworking. Laughlin. Pub. by A. P. Laughlin, Peoria.
- Furniture Upholstering, by J. T. Stevenson, Pub. by Clifford and Lawton, N. Y.
- Handwork in Wood, by William Noyes, Pub. by Manual Arts Press, Peoria.
- Manual Training Toys, by H. W. More, Pub. by Manual Arts Press, Peoria.
- Problems in Furniture Making, by F. D. Crawshaw, Pub. by Manual Arts Press, Peoria.
- Woodworking for Secondary Schools, Griffith, Manual Arts Press, Peoria.

*Wood Turning and Pattern Making.*

- Problems in Wood Turning, F. D. Crawshaw, Manual Arts Press, Peoria.
- Wood Turning, G. A. Ross, Ginn & Co.
- Wood Pattern Making, Horace Purfield, Manual Arts Press, Peoria.

List of Books on Manual Training for a Large School Library.

By A. C. Newell, Chairman of Committee

*Woodworking.*

- Include also all books given in the list for a Small Library.
- Beginning Woodwork, C. S. Van Deusen, Manual Arts Press.
- Benchwork in Wood, W. F. M. Goss, Ginn & Co.
- Cabinetwork and Joinery, P. N. Hasluck, D. McKay, Philadelphia.
- Constructive Carpentry, C. A. King, Am. Book Company.
- Elementary Cabinet Work, F. H. Selden, Rand, McNally & Co.

- Elementary Woodwork, F. H. Selden, Rand, McNally & Co.  
 Elementary Woodworking, E. W. Foster, Ginn & Co.  
 Educational Woodworking for School and Home, J. C. Park, Macmillan Co.  
 Furniture Designing and Drafting, A. C. Nye, Wm. J. Comstock, N. Y.  
 Handbook of Sloyd (old book), Otto Salomon, Silver, Burdett & Co.  
 Handbook of the Trees of the United States and Canada, R. B. Hough.  
 Hodgson's Hardwood Finishing, Fred T. Hodgson, F. J. Drake & Co., Chicago.  
 Kitecraft and Tournaments, Miller, Manual Arts Press.  
 Mission Furniture and How to Make it, Parts 1-2-3, Popular Mechanics Co., Chicago.  
 Modern Cabinet Work, Wells and Hooper, John Lane Co., N. Y.  
 Manual Training for Common Schools, T. G. Allen, Scribner, N. Y.  
 Problems in Carpentry, Louis Roehl, Webb Pub. Co., St. Paul, Minn.  
 Problems in Farm Work, Blackburn, Manual Arts Press, Peoria.  
 Problems in Woodworking, M. W. Murray, Manual Arts Press.  
 Timber, Bulletin 10, Bureau of Forestry, U. S. Dept. of Agriculture. Sold by Supt. of Documents, Washington, D. C.  
 The Decay of Timber, H. Von Schrenk, Gov't. Printing Office, Washington, D. C.  
 The Modern Wood Finisher, F. Maire, Press of Western Painter, Chicago.  
 The Seasoning of Timber, H. Von Schrenk, Gov't. Printing Office, Washington, D. C.  
 The Steel Square, Fred T. Hodgson, Industrial Publishing Co., N. Y.  
 Wood and Forest, William Noyes, Manual Arts Press.  
 Woodwork, Samuel Ritchey, American Book Co.  
 Woodworking, P. N. Hasluck, David McKay, Pub., Philadelphia.

Short List of Useful Books on Mechanical Drawing for a School Library.

By A. C. Newell.

*Elementary Mechanical Drawing.*

- Letters and Lettering, Brown, Bates and Guild Co., Boston.  
 Problems in Mechanical Drawing, C. A. Bennett, Manual Arts Press, Peoria, Ill.  
 Lettering for Draftsmen, Reinhart.  
 Mechanical Drawing for Secondary Schools, Crawshaw and Phillips, Scott, Foresman and Co., Chicago.  
 Mechanical Drafting, H. W. Miller, Manual Arts Press, Peoria, Ill.

*Elementary Machine Drawing.*

- Machine and Architectural Drawing, Book 2, Spink, Sloan, Evans, etc., Atkinson Mentzer Co., Chicago.  
 Machine Drawing, F. E. Mathewson, Taylor, Holden Co., Springfield, Mass.  
 Machinery's Reference Series, No. 85, 86, 87, 88, Machinery Publishing Co., N. Y.  
 Mechanical Drawing for Trade Schools, C. C. Leeds, D. Van Nostrand Co., N. Y.

*Orthographic Projection.*

- Introductory Course in Mechanical Drawing, J. C. Tracy, Am. Book Co.

*Architectural Drawing.*

- Architectural Drafting, Howe, Manual Arts Press, Peoria.  
 Architectural Drawing, Edminster.  
 Architectural Perspective for Beginners, Wm. T. Comstock.  
 Detailed Working Drawings of the Five Orders of Architecture, Jas. T. Ball, W. T. Comstock, N. Y.  
 Art Education for High Schools, R. H. Smith.



Additional Books on Mechanical Drawing for a Large School Library.

Include Also All Books on the Short List.

By A. C. Newell.

- Agricultural Drafting, Howe, Manual Arts Press, Peoria.  
 Architectural Drawing, Greenburg and Howe, Manual Arts Press.  
 Elementary Course in Mechanical Drawing, A. W. Chase, Howland Speakman, Chicago.  
 Elementary Mechanical Drawing, C. W. Weick, McGraw, Hill Book Co., N. Y.  
 Machine Drawing, John S. and David Reid, Wiley and Sons.  
 Mechanical Drawing, Book No. 1, Spink, Sloan, Evans, Durand and Zimmerman, Pub. by Atkinson, Mentzer Co., Chicago.  
 Mechanical Drawing, Phillips and Orth, Scott, Foresman and Co., Chicago.  
 Mechanical Drawing, Gardiner C. Anthony, by D. C. Heath and Co.  
 Mechanical Drawing, Phillip H. Hutton, Scott, Foresman and Co.  
 Mechanical Drawing, A. K. Cross, Ginn and Co.  
 Notes for Mechanical Drawing, F. E. Mathewson, Taylor, Holden Co., Springfield, Mass.  
 Perspective Sketching from Working Drawings, F. E. Mathewson, Taylor, Holden Co., Springfield, Mass.  
 The Essentials of Lettering, French and Meikeljohn, McGraw-Hill Book Co.

List of Books on Manual Training in Education for a School Library

By A. C. Newell.

- Educational Meaning of the Manual Arts and Industries, R. K. Row, Pub. by Row, Peterson and Co., Chicago.  
 Education for Efficiency, E. Davenport, D. C. Heath and Co.  
 Examples of Industrial Education, F. M. Leavitt, Ginn and Co., Chicago.  
 Hand and Eye Training, Dr. W. Goetze, O. Newman and Co., London.  
 Handwork Instruction for Boys, Dr. Alvin Pabst, Trans. from the German, Pub. by Manual Arts Press, Peoria.  
 Industrial Education, H. S. Person, Houghton Mifflin Co., N. Y.  
 Manual Arts for Vocational Ends, F. D. Crawshaw, Manual Arts Press.  
 Manual Training, (old book) by C. M. Woodward, D. C. Heath and Co.  
 Theory of Educational Sloyd, (old book), Otto Salomon, Silver, Burdett & Co.  
 The Worker and the State, A. D. Dean, The Century Co., N. Y.  
 Sloyd System of Woodworking, D. B. Hoffman, American Book Co.  
 Mind and Hand, (old book), C. H. Ham.

*Miscellaneous Books.*

- Choosing a Vocation, F. A. Parsons, Houghton Mifflin Co., N. Y.  
 Education for Citizenship, Kerschensteiner.  
 Education for Industrial Workers, Schneider, World Book Co., Youngkers, N. Y.  
 Industrial Education, A. H. Leake, Houghton Mifflin Co., N. Y.  
 Printing and Book Binding, S. J. Vaughn, Pub. School Publishing Co., Bloomington, Ill.  
 The Vocational Guidance of Youth, Bloomfield, Houghton Mifflin Co.  
 Vocational and Moral Guidance, Davis, Ginn and Co.  
 Vocational Guidance, Puffer, Rand, McNally and Co., Chicago.  
 Vocational Education, John M. Gillette, American Book Co., Chicago.  
 Vocational Education, Snedden, Houghton Mifflin Co.  
 Vocations for Girls, E. W. Weaver, A. S. Barnes Co., N. Y.  
 Wood Carving, C. G. Leland, C. Scribner and Sons, N. Y.

*Books on Art Metalworking.*

- Art Metalworking with Inexpensive Equipment, A. T. Payne, Manual Arts Press, Peoria.  
 Copper Work, Rose, The Davis Press, Worcester, Mass.  
 Industrial Arts Design, Varnum, Scott, Foresman Co., Chicago.  
 Metal Work and Etching, John D. Adams, Popular Mechanics Co., Chicago.  
 Hand-wrought Jewelry, Sorenson & Vaughn, Bruce Publishing Co., Milwaukee.

*Design*

- Industrial Arts Design, Varnum, Scott, Foresman Co., Chicago.  
 Classroom Practice in Design, Haney, Manual Arts Press, Peoria.  
 Plant Form and Design, Midgley & Lilley, Chas. Scribner & Sons, N. Y.  
 The Use of the Plant in Decorative Design, Parts 1-2-3-4-5, Lawrence and Sheldon, Scott, Foresman & Co., Chicago.  
 Theory and Practice of Teaching Art, Dow, Teachers College, Columbia, N. Y.  
 Industrial Arts Text Books, Parts 1-2-3-4-5, by Bonnie E. Snow and Hugo B. Froehlich, Prang & Co., Chicago.  
 Applied Arts Drawing Books, Wilhelmina Seegmiller, Atkinson, Mentzer & Glover, Chicago.  
 Design in Theory and Practice, Batchelder, Macmillan Co.  
 Principles of Design, Batchelder.  
 Art Education for High Schools, Prang Educational Company.  
 List of Books on Metal Working for a High School.  
 Machine Shop Practice, by W. J. Kaup.  
 The Storiott Book for Machinist Apprentices, by Howard P. Fairfield & Carl S. Dow.  
 Forge Practice, by John L. Bacon.  
 Notes for Forge Shop Practice, by J. D. Littlefield.  
 Practical Smithing and Forging, Moore, Spon & Chamberlain, N. Y.  
 Farm Blacksmithing, by T. M. Drew, Webb Pub. Co., St. Paul, Minn.  
 Hand Forging and Wrought Iron Metal Work, Googerty, The Bruce Pub. Co., Milwaukee.  
 Forge Work, by Wm. L. Ilgen, American Book Co., Chicago.

*Afternoon Session*

The program for the afternoon began with a paper on What Is Wanted in a Manual Training Text Book? by S. J. Vaughn, DeKalb, Illinois.

Mr. Vaughn's paper follows:

The term Manual Training should undoubtedly be used in the more comprehensive sense to include the various forms of handwork, such as benchwork, pattern making, carpentry, cement construction, forging, printing, machine shop practice, etc. It is apparent, therefore, that a discussion like this cannot deal with the details and materials of a text book for a particular line of work, but must concern itself with the fundamental principles upon which texts for the various lines of work must be built.

This is all the more important, since text books for the grammar grades, high school, and college must show considerable variation both in the nature of the material and in the points of emphasis.

There is a third consideration which must modify any statement of principles relating to text books, and that is the different classes of books on the same subject. The books which have been used by the manual training people fall into three classes, as follows:

1. Books dealing with a form of work which is comparatively new to the school field and in which the teacher as well as the pupil needs detailed information.

2. Books of an encyclopedic nature which are used for general reference purposes.

3. Text books to be put into the hands of the pupils.

It is the last named class with which the discussion is chiefly concerned. The text book for the pupil should be planned to meet at least five distinct purposes.

### *Purposes of a Text Book.*

1. To narrow the scope and direct the line of the work or investigation.

Since a class in school cannot hope to deal with every possible phase of the various lines taken up, it is apparent that certain material must be selected from the great mass of possible material. It is one of the first functions of a text book, therefore, to limit the field of effort in a particular line.

Not only does a text limit the field of study, but it should lend definiteness to the work in hand. The two monumental defects in the manual training work are, as might be expected, at the opposite poles. One is the rigid routine of lifeless formality. This held sway in the early days of manual training, and the introduction of text books did not materially modify it. Dr. G. Stanley Hall refers to this type of work as "iron in its inflexibility and wooden in its intelligence." The other defect is the extreme haphazardness of whimsical caprice. This follows from a lack of understanding of the principle of interest, and from a lack of guidance in the problems and procedure of the work. The latter a proper text book should remedy.

2. To provide certain salient, fundamental, guiding principles upon which to carry forward the work in hand.

The emphasis has too long been placed upon mere tools and "sequential tool processes." The tools and processes must be regarded as necessary means of carrying out important undertakings and arriving at results which are significant and needful in the life about us. The principles involved in various types of construction underlying great industrial operations are as important as "Sequential tool processes," which are often neither sequential nor necessary in much of the real work of the world. This is not said in opposition to the accurate use of tools. It simply proposes that such use be linked up with principles and bodies of thought that lie beyond the mere manipulation of instruments.

3. To furnish an authoritative, well, organized, pertinent body of information relating to the definite phases of the work undertaken by the text.

Perhaps there is no more important function of the text book than the furnishing of sane, pertinent, and needful information at the proper time and in the proper amount. Texts are in grave need of revision along this line. It is too often assumed that because a book is to be put into the hands of a boy who is to use a plane, a screwdriver, and a try-square, it is necessary to pad the book with interminable descriptions of those tools and scores of others. An author should assume some intelligence on the part of the pupil and teacher, and should leave much of the descriptions of tools and the discourses on Botany in wood-work to works of reference, except where such material bears directly upon the problems in hand.

A much neglected phase of manual training is the giving of interesting and accurate information concerning the actual industrial work and processes to which the school work is closely related. This creates an atmosphere of reality, raises the work of the boy out of narrow abstraction, universalizes it and makes it significant.

4. To set forth for the pupil's guidance and work a suggestive list of



problems within the field defined by the text, based upon the principles laid down, and made meaningful by the information given. This will be discussed further under the Method of the Text Book.

5. To standardize within sane limitations, the work of the class in a particular line.

It is highly important that some standard of accomplishment be maintained. It would be a very happy achievement if some method could be devised whereby not only the amount of information and skill could be ascertained, but also a reasonably accurate estimate could be placed upon the reaction of the work upon the worker. Some systems of tests have already been devised, especially in the line of woodwork. The fatal defect of such systems, as with all similar systems, is the fact that no adequate account has been taken of the human element involved in the work. And from the educational point of view, this is the vitally important thing. It is infinitely more important to know what influence the block of wood has had upon the boy, than it is to know what influence the boy has had upon the block of wood. The value of the latter is in helping one to understand the former.

#### *Method of the Text Book.*

1. The material should be presented in problematic form.

One of the greatest advances made in modern education is the recognition of the fact that the more nearly a subject presents real problematic situations, the more effective the subject is as an educational force. For generations, arithmetic was perhaps the most important subject in the elementary school and was the most thoroughly handled, because it readily took the form of the problem. In manual training, it is desirable that only the general conditions and limitations be prescribed by teacher or text, and that the thinking out and planning the details of the problems be a very essential part of what is required of the pupils. This does not preclude the possibility or the desirability of certain exercises or test pieces at the beginning or at intervals during the course.

2. The fundamental principles and the fund of information furnished by the text should be given in direct connection with those problems or projects which illustrate concretely such principles and information. For instance, the place for a principle of construction is in direct connection with a problem involving such construction. The place for necessary information concerning a tool and its uses is in direct connection with work requiring the use of such a tool.

Too often, texts have given voluminous chapters to lengthy and unrelated descriptions of tools, and other chapters to lengthy discussions of the growth of trees, the different kinds of woods, etc. These are important, but they belong, for the most part, in books of reference. Very brief statements on such topics in immediate relation to problems involving and demanding such information would be of infinitely more value in a text.

3. Constructions and fundamental operations should be well illustrated.

By examining a number of text books, one will find that many of the drawings and photographs are intelligible only to those who are already familiar with the construction or operation illustrated. No one should expect that a beginner could interpret fully an illustration, but a drawing or photograph should be so nearly perfect as to present clearly and accurately the facts of the construction or operation. If it does not do this, it is in no sense an illustration. If an illustration is to be of service to the uninformed on that particular point, it must not be so made as to require an expert to determine the facts which it is supposed to present.

### Discussion

Q. Do you expect a text book to be good enough or plain enough

to learn processes from the book, through illustration and description? Is it not more of a supplement to the instructor?

A. I do not want a boy to get the first information from the book, necessarily, but if an illustration is to be used at all it should be clear enough to help the uninformed. The picture, of course, will not interpret itself.

Mr. Howell: I examined a new book on Woodwork. It is the same old type,—some man has put down exercises numbered one, two, etc. The same old one man's idea of what should be done. To me this does not represent a good type of text book. A new text would be required each year. Such books lack suggestion.

Chairman: Many text books contain scattered information. They lack compactness of information,—definite, and easily available in a short time.

Mr. Bennett: A text book is written like a correspondence book, and takes the place of a teacher if necessary. It should, however, be correlated closely with and supplement the work of the teacher. Some books give good information, and some students can get this information from the books, but due to the variability of humans it is usually more of a supplement.

Padding often a fault with text books,—usually three or four pages to cover work which could be written in a half page.

Books invaluable to the teacher, especially to supplement and intensify points of importance.

A report on the Work of the Industrial Extension Department of the University of Wisconsin. Wilson H. Henderson, University of Wisconsin. "The Selection and Training of Teachers for Wisconsin Industrial Schools". Mr. Henderson spoke as follows: .

Several years ago the State of Wisconsin ceased quibbling over the question, "Shall we have Industrial Education?" and established a law providing industrial schools for the entire state. In doing this, Wisconsin accepted the principle that people in all grades of legitimate occupations are entitled to training for efficiency in that occupation. The law provides that any group of twenty-five people who shall petition the local Board of Industrial Education for training in any line of work shall be given it. It can be seen that the enactment of such a law at once placed before the Industrial Schools of the State a complicated problem calling for a readjustment of schools, equipment and teachers. The greatest difficulty was experienced in finding teachers who could furnish the desired information in a satisfactory manner.

The law provided for four different types of schools; the all day industrial school for pupils over 14 years of age who have secured permits to go to work and are temporarily unemployed, or who having these permits have decided to go to school instead; the day continuation school for the permit pupils and apprentices; the evening school for industrial workers who are not apprentices; and

the commercial school teaching office work. This paper deals with the first three types of school mentioned.

It will be seen at once that the pupils attending these schools require instruction which will fit them for work either in their present occupation or one to be entered upon in the very near future. They are pupils who for one reason or another have left the common schools, many of them because they were uninterested in the instruction which they received there, some because of economic necessity and the few who left the common schools because the common schools did not want them. In other words, this group of pupils had refused to accept the instruction offered by the common schools.

As the law requires that all pupils between the ages of 14 and 16 must attend school at least five hours a week many of them returned to school only because of the compulsory feature of the law and with a resentful attitude toward the school.

The first problem of the school was to induce these boys and girls to accept an education which they would not or could not accept from their former school. The common school had attempted to have these children accept instruction which would function at a remote place in their after life. The problem of the industrial school was to give them instruction which they could use at once in their occupations.

The problem therefore was one of organizing a different type of instruction and presenting it in very much the same way that a salesman meets his problem. Salesmen have found that their first step is to secure the favorable attention of the purchaser. This attention leads to interest, which leads to action on the part of the prospective customer in accepting what is offered. Therefore the teachers for these schools had to know what the boy would need in his occupation and have the ability to so organize and present it that he would gain the favorable attention, interest of the pupil and his acceptance of the instruction.

It will be readily understood that this required a type of teacher differing widely from those usually found in academic institutions. Two different methods of preparing such teachers suggested themselves. One was to have a teacher who understood teaching methods, etc., go into shops and industries and become familiar with the technical information and ability required by the industries. A number of difficulties attended this method. The first is that persons who have prepared to teach cannot afford to devote their time without pay to going into the shops and industries and gaining this information. The time required for gaining it is by no means inconsiderable. The other method is that of having persons who are already familiar with industries and their methods gain the necessary teaching qualifications.

To meet the situation the Extension Division of the University in the fall of 1911 instituted an experimental class seeking to determine the feasibility of training skilled tradesmen for teaching. As Madison does not have industries employing large numbers of skilled tradesmen this class was formed in Milwaukee under the direction of Prof. Crawshaw. There was no desire to exploit any theories regarding teachers, but the experiment was made to determine whether under favorable conditions, skilled tradesmen can by a course of evening instruction, be prepared for teaching. The men admitted to the class were all journeymen patternmakers who appeared to possess native ability as teachers. This class was taught by instructors of the Extension Division and by Prof. Crawshaw of the department of manual arts, who went from Madison to Milwaukee for this purpose.

The results of the experiment were encouraging. The men trained in this class all secured ready employment in trade and industrial schools, where their work was quite satisfactory. The feasibility of the plan having been demonstrated, the University authorities decided to continue and extend the work and placed a man in Milwaukee for this purpose.



The plan in operation at the present time is as follows: Evening classes for the training of industrial teachers are conducted in the University Extension Building in Milwaukee. To these classes are admitted experienced tradesmen, preferably between the ages of 25 and 40, who give promise of becoming proficient teachers. Applicants are interviewed and those who do not give promise of developing teaching ability are advised not to enter the course. We require a common school education, and have some men who have graduated from high school and a few with college training. We have not discovered a formula by which a man can be tested for those qualities which make for leadership and success, such as patience, initiative, persistence, and adaptability. We have interviewed high school graduates who used miserable English and had not read a book since leaving high school. On the other hand, we have met men with little schooling but who have keen intellects and are exceptionally well informed.

The course, in which considerable latitude is allowed, provides for two years of evening instruction, 32 weeks a year, and one year of supervised teaching either in an evening school in Milwaukee or vicinity or in an all day school should the man secure a position before securing his certificate. The subjects taught in class include a study of the economic, social, and educational significance of industrial education, the history and development of industrial education in American and European schools, laws of various states concerning vocational education, and methods of industrial school organization and administration. The course in English consists of one and one-half years of English composition and construction, followed by one-half year of methods of teaching English in industrial schools. The course also includes mathematics, mechanical drawing, civics, and industrial hygiene, each taught in such a manner as to give the student not only a knowledge of the subject, but instruction in the methods of teaching the subject in industrial schools.

A number of features commend the scheme. It selects the promising tradesman with mature judgment, who is an expert in his trade, has been fairly successful in the industries and is therefore familiar with the conditions which a boy must meet when he enters the shop. There is every reason to expect that this man after such a course as has been described, followed by a year of supervised teaching in an industrial school, will be successful as a teacher of trade subjects. The length of the course allows him time for development and to mentally adjust himself for teaching.

The exceptional man in the trades who has a desire to teach has an opportunity to gain the training and experience necessary for advantageous entrance to teaching without the loss of time and pay which would be necessary if attending an all day school. It enables him to test his adaptability to teaching and to judge his prospect of success in it without giving up his present employment.

Our location is especially favorable. Milwaukee is a city of large industries employing many skilled workmen, giving us a large group from which to select the pupils. Our building is down town and thus accessible from all parts of the city. The city has excellent trade and continuation schools with a fine spirit of cooperation, offering unparalleled opportunities for teaching experience in day and evening schools. The boys' Continuation School has made it possible for a number of men to get experience as assistants in Saturday afternoon classes. Our proximity to a number of small cities has also assisted us in placing men in evening trade extension classes.

Being a part of the State University gives the department a ranking which is also favorable. The men are in classes with men of their own age and position. All classes in the building are composed of mature men and women engaged in industry, business, and professions who come for and with a serious purpose. Being a part of the Extension Division gives access to the excellent courses in drawing, mathematics, and other industrial subjects which have been developed at the expense of considerable time and effort by men experienced in these lines.

We keep in very close touch with the industrial schools of the State, and are therefore familiar with their needs. The schools of the State can select their teachers from a group of expert tradesmen who have been trained for teaching and have had some experience in teaching and managing a class. These men are also available as teachers of evening trade extension classes in Milwaukee and vicinity. At the same time the per capita cost of preparing these teachers is much less to the State than in the other State institutions which require all day attendance.

The scheme is not altogether free from difficulties. The men are tired after a day's work and it requires a degree of enthusiasm on the part of the instructor to interest a drowsy class, and no small amount of persistence on the part of the students. The tuition is \$25.00 a year, which excludes some who feel that they cannot afford this amount. These difficulties are not entirely unmixed evils, however. The tuition excludes the curious fellow who has no serious intentions of teaching, and only the persistent one will survive the two years of evening study. The men when they enter are not, as a rule, in the habit of studying, and as the large industries employ many foreigners, some of them are quite careless in their own use of English.

The salaries paid to teachers are not sufficiently adequate to attract high grade foremen and superintendents to the schools. This is especially true when business is prosperous and employment steady. Our plan, however, soon weeds out the poor mechanic who wants to enter teaching because he thinks it is easy money.

Many high schools require graduation from a four-year college course as a requisite to teaching. Our graduates are, of course, not eligible to appointment in such schools. This rule will necessarily be modified by those high schools that wish to give instruction in trade subjects.

This work conducted by the Extension Division in Milwaukee is in addition to a very complete department of Manual Arts maintained on the campus in Madison. The University also awards each year scholarships of \$400 each to two skilled craftsmen in the state who wish to devote a year in residence work at the University in special preparation for teaching in industrial schools.

For the past three years the Department of Manual Arts has conducted what is known as the Mechanics' Institute attended by holders of special industrial scholarships, awarded to journeymen mechanics selected from the industries in various parts of the state. In 1913 and 1914 twelve scholarships of \$40 each were paid to students at the close of four weeks' attendance at the institute conducted in Madison. In 1915 the institute was held for eight weeks and each scholarship entitled the holder to \$60.00. It has been decided not to conduct the institute in 1916.

Our experience has demonstrated that it is possible for mechanics through special preparation to enter industrial schools and do satisfactory teaching. This is not saying that every mechanic will make a good teacher, but the same might be said of college or normal school graduates.

### Business Session

Election of Section Committee for 1917: C. E. Howell, Decatur, Chairman, 1917; A. F. Payne, Peoria, 1917; L. A. Tuggle, Danville, 1918; Miss Mary B. Hill, Champaign, 1918; Prof. E. J. Lake, University of Illinois, 1918.

The motion was adopted that the Chairman appoint a Committee of five to revise the course of study for manual training adopted by the Manual Arts Section of the Conference: Chairman, S. J. Vaughn,

DeKalb; C. E. Howell, Decatur; Albert F. Siepert, Peoria; A. H. Hill, Rock Island; Miss Anna G. Brown, Jacksonville.

The motion was adopted that the Chairman appoint a Committee of three on standardizing grading methods in manual training: Chairman, A. C. Bloodgood, Aurora; P. E. Errickson, Herrin; A. P. Laughlin, Des Plaines.

A meeting of the Section Committee was held after the close of the section meeting.

### MATHEMATICS SECTION

The meeting of the Mathematics Section was called to order by Mr. L. C. Irwin of Joliet.

The business of the section may be summarized as follows: The chairman appointed a nominating committee consisting of Dr. A. R. Crathorne, University of Illinois, chairman; Mr. Alfred Davis, Francis W. Parker School, Chicago; and Mr. W. H. Taylor, Charleston Normal. The committee nominated Dr. L. T. Wilson, University of Illinois, as a member of the Conference Committee. A motion, made by Mr. Austin of Oak Park and seconded by Dr. Taylor, of Charleston, to appoint Dr. Wilson was carried.

The morning session was occupied with the report and discussions which follow.

Standardized Tests and the Improvement of Teaching in First Year Algebra.\*

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#### A. NECESSARY CRITERIA FOR A PROGRAM FOR THE IMPROVEMENT OF INSTRUCTION

It is possible to attack the problem of the improvement of instruction in a high school subject in a scientific experimental way. To do so in the most complete fashion will necessitate the setting up of a thorough going program embracing the following steps:

1. Stating definitely the aims and outcomes of instruction in the particular course of study.

2. Classifying clearly the subject matter of the course on a basis of the principal modes of learning involved in its mastery: a statement of the content of the course, both from a standpoint of the amount of material included and of the classification, arrangement and order of presentation.

3. *Designing and giving tests which will adequately measure ability in each of the fundamental phases of the subject matter agreed upon.*

\*A final report on the Experimental Determination of Standards in First Year Algebra—made to the Mathematics Section of the University of Illinois High School Conference, November 24, 1916



4. Critically evaluating the testing so as to give a complete and differentiated statement of fundamental weaknesses in learning: (e. g., as revealed by the typical errors made by pupils.)

5. Setting up experimental attempts to eliminate these fundamental weaknesses; from the standpoint of economy of time this means the design of drill exercises, the determination of specific "best ways" of presenting material, of order of presentation, and of optimum length of drills.

In brief, the writers have carried through to completion the first four steps of this program and have begun work on the fifth step. We believe that sufficiently adequate standards have been set up to enable teachers to attack the problem of teaching first year algebra in a thoroughly experimental way. We suggest careful consideration of the results of the work to date, and the thorough-going cooperation of teachers of algebra generally, in improving instruction in the subject.

### *I. The Aims and Outcomes of Instruction.*

The first step in the program of improving teaching in first year algebra involves the definite statement of the aims and outcomes of instruction. In the preliminary report of this investigation (see School Review, January 1916) we made a complete statement of these aims and outcomes.

The statement made in the preliminary report, was doubtless misunderstood by many teachers of algebra. The commonly accepted inference was that "standardization" according to our aims, methods, and criteria, meant complete "mechanization" of first year algebra instruction. Nothing is farther from the truth concerning our real position than that. For that reason we wish to emphasize herewith:

#### *Our Position—The fundamental Aim of First Year Algebra.*

*To develop ability to use algebraic methods in the solution of "original" or "novel" problems stated in verbal form.*

Three years of research in this field has convinced us, however, that efficiency in the solution of "original problems" is absolutely contingent upon a thorough mastery of each of the "tool" operations. This report will present detailed evidence on this point.

It has been shown that success in teaching algebra depends primarily on the knowledge that the teacher has of the typical difficulties the pupil will meet in learning algebra. These difficulties may be found by testing the pupils ability to manipulate the different formal operations and to use these in the solution of "translation" problems. To design tests for these operations necessitates a clean cut statement and classification of the formal operations themselves. The committee now wishes to go on record as stating its belief that the *Fundamental Formal Operations* of first year algebra are those given in the following pages and that *ability in the manipulation of each of these should be made absolutely automatic.*

*Teachers Agree:* that pupils must have *automatic* skill in manipulating the "tables" in arithmetic; that the spelling of "common words" shall be absolutely mastered (*automatized*) so that pupils will *NEVER* make a mistake in spelling them; that a certain quality of hand writing shall be written by our pupils at a definite speed and that it shall be done *automatically*; that pupils shall perfect certain "*automatic*" *habits* of "reading" in the early years so that the lessons in history and geography and literature shall not be turned into lessons in the development of the formal skill in getting meaning from the printed page.

In the same way, in order for the pupil to use algebraic methods successfully, in the solution of verbally stated problems, he must have absolute mastery of the tool operations he is going to use in that solution. A pupil should remove parentheses, factor, solve simple equations, use special products, exponents, radicals, etc., just as he uses the multiplication table, writes, spells, or gets meaning

from written language; *in a word,—automatically.* It is not economic or expedient to force pupils to raise to “thinking” or “reasoning” levels, the formal manipulation of these purely tool operations. The Committee on Standards is, therefore, insisting on thoroughness in the formal operations, in the interest of *“Economy of Time” in first year algebra, or, in other words, in order that a larger amount of time may be spent in the use of the formal operations in solving “original” problems.* This report will show methods by which, it is believed, this may be done.

The reader should be cautioned that “automatism” in the more complex processes, (e. g., fractional equations), does not necessarily imply the instantaneous reaction of the pupil with the completely worked out “answer” to the problem. In the case of problems containing but one or two steps the automatic response should be the “answer”. But, in the case of problems involving several steps automatism means the *continuous unbroken reaction of the pupil with the proper steps in the solution.* The steps in the procedure of manipulation of the operation in question should be made completely a part of his system of automatic habits.

## II. The Content of First Year Algebra.

### (a) The Fundamental Formal Operations.

### (b) Types of Verbal Problems.

Our program next demands a complete classification of the content of first year algebra. We have differentiated sharply, the content of algebra, between the formal processes of algebra and their application in verbal problems. Our preliminary investigation has shown that to test adequately the algebraic abilities of pupils in the use of algebraic symbolism in “original situations” *we must draw a sharp line between abilities in the formal processes and abilities in their application.* The former may be measured by one type of test, a *formal time test*, the latter by another type, the *translation verbal test*, in which it is questionable whether there should be an “active” time limit. We give next a mere list of

### (a) The Fundamental Operations of First Year Algebra Ability in Which Should be Tested.

- |                            |  |
|----------------------------|--|
| 1. Removal of parentheses. | 8. Clearing of Fractions and fractional equations. |
| 2. Combining terms.        | 9. Quadratic equations.                            |
| 3. Subtraction.            | 10. Graphing equations.                            |
| 4. Evaluation.             | 11. Solution of “practical” formulae.              |
| 5. Special products.       | 12. Simultaneous equations.                        |
| 6. Factoring.              |  |
| 7. Exponents.              |  |

Mr. E. C. Denny, of the Illinois Committee on Standards, has made a very complete analysis of the content of first year algebra as shown by currently used text books and the distribution of problems as indicating the types of opportunity for training which are now offered. It is expected that this report will be published separately and so the material will not be duplicated here. We may say in brief that the material collected in this phase of the work of the committee has been used to check up the work of the organization of content and the interpretation of the results of testing pupils. His data lend added weight to our conclusions.

### (b) The Types of Verbal Problems Represented by our Study.

Verbal problems may be classified on two bases, namely, (1) on the basis of degree of equations involved and the number of unknowns; (2) on the basis of the subject matter composing the problems. The latter basis lends itself more easily to the design and classification of verbal problems for testing purposes and was used in this investigation. The problems for which “scoring weights” have been worked out in this study fall under the following heads: (1) geometry problems (area, perimeter, angle, line, and volume problems); (2) physics

problems (temperature, lever, falling bodies, formulae for sound, light, etc.); (3) motion problems; (4) problems involving ration and proportion; (5) coin problems; (6) work problems; (7) mixture problems; (8) digit and number problems; (9) age problems; (10) clock problems; (11) percentage problems.

### III. The Standardized Tests in First Year Algebra.

The statement of the aims and outcomes of instruction and the content of the subject matter paves the way for the design of tests for each of the fundamental operations. Our 1915 report treated fully the important question of *the determination of a valid method for measuring efficiency in the formal processes and in their application in verbal problems*. It was shown there, (1) that the teacher-judgment method did not lead to an accurate determination of the difficulty of algebra problems; (2) that "mixed-scales", containing both formal and translation problems, are not valid measures of the single types of mental processes involved in particular kinds of algebraic operations; (3) that the best hypothesis concerning difficulty of algebra problems is that based upon the proportion of a large group of pupils solving the problems.

The third revision of the Standardized Algebra Tests (Rugg and Clark) was submitted to teachers of algebra during the spring of 1916\*. The tests have been constructed, criticised and revised three times in accordance with the principles of design set forth last year. It should be pointed out that other algebra tests which have been made up, printed and used by many school systems, do not make use of detailed principles of design. This investigation has convinced us that the principles stated last year are essential to sound testing.

May we emphasize here the importance of the cycle principle of design brought out at that time.

#### The Cycle Principle of Rotation of Problems.

The various ways in which the symbols, letters, etc., may be arranged for a given type of operation *should appear in exact rotation* in the test. For example in Test I, there are six principal ways in which parentheses problems may be "arranged"; i. e., considering the use of the  $+$  and  $-$  signs, ( ), letters, etc. These appear in Test I in such order that in the 1st, 7th, 13th, 19th and 25th problems the signs and symbols occupy the same relative positions, i. e., the problems involve the same algebraic and mental processes. Our research shows that *it is of the utmost importance that this "cycle principle" be followed in the most rigorous fashion*. The importance of this point is indicated by the differences in difficulty that are revealed by Table I, which show how a few failures to follow the principle *exactly* caused quite different percentages of failure on the part of pupils in solving the problems.

Attention should be called to the fact that the validity of other algebra tests which have been drawn up without regard to this principle should be seriously called in question. For example, the Indiana Algebra Tests, based upon the "Standard Research Tests" devised by W. S. Monroe, sent out from the University of Indiana, have been made up in such a way that the efficiency of pupils solving a given number of problems on any test cannot be validly compared with the efficiency of pupils solving half as many, a third as many, twice as many, etc. To illustrate this point of view we reproduce below Test II of this series of tests.

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\*The eleven printed tests for the formal processes, together with complete lists of standardized verbal "translation" problems, may be secured in quantities from H. O. Rugg, School of Education, University of Chicago. The tests will be sold during this year at four cents per set (a set to a pupil). The fourth reprinting (within the next year) will enable us to sell these at a lower rate.



- |                   |                      |                     |
|-------------------|----------------------|---------------------|
| 1. $4(3x-4)=$     | 5. $-4a^2(8x+4a^5)=$ | 11. $-x(5-6x)=$     |
| 2. $-5x^3(4x-1)=$ | 7. $-7(-5x+8)=$      | 12. $-5(-7x+3)=$    |
| 3. $-7(2+3x)=$    | 8. $-8x(-3x-5a^3)=$  | 13. $-5(-4x-6y)=$   |
| 4. $-5(-4+6x)=$   | 9. $6(2-4x)=$        | 14. $-6y^2(-9-7x)=$ |
| 5. $3(-1+6x)=$    | 10. $-3(9-x)=$       | 15. $-4(x-2)=$      |

Certainly no definite principle of design controls the placing of problems in this test. Our results show that *this is an essential step that must be followed if we are to have sound criticism of school practice in these matters.* It can be definitely prophesied from our investigation that these problems, many of which are several times as difficult as others (problem 1 compared to problems 2, 6, 8, or 14, for example) are not put together in such a way as to lead to comparable results in testing pupils.

The construction of tests to measure the abilities of pupils should be based upon the most scientifically worked out research principles. Recognizing the urgent need for care in such work we have checked the "cycle principle" of rotating problems in two different years of experimentation. The results are given in Table I. in the complete report for readers interested in this phase of the work. This table gives the percent of all those pupils (over 2500 took the various tests) who attempted each problem in each test, who failed to work the problem in question correctly. This investigation has not been able to inquire in detail into the effect of "practice" in working the recurring problems of the cycle. We believe it will operate in the more difficult tests to give a gradually decreasing percent of failures on successive problems of a particular type. A table has been made up and examined carefully to discover which problems in each test are not roughly equal in difficulty to corresponding problems in other cycles. A problem in which a distinctly larger or smaller percent of failures is found, has been replaced by another. Careful study of such problems has in almost all cases revealed peculiarities in construction, or in scoring, that cause a problem to be thrown out. For example, problem number 3 in Test 6: percent of failures equal 3.5% compared to 30-36% in all other corresponding problems. Study shows that the problem is so constructed that we can not determine by an inspection of the pupils' answer whether the mental process is correct or not. The particular error that students make in this problem is that of "adding exponents instead of multiplying them".  $(n^2)^2$ , gives the same answer regardless of the process and thus the work of the pupil cannot be diagnosed to find out whether he is "right" or not. This method of analysis has been applied in each test and the following list of corrections is given. The tests will be reprinted this year with these corrections made. We believe that they will then thoroughly justify the title, "Standardized Tests in First Year Algebra" and that they may be used by teachers to check up specifically the ability of their pupils in the formal operations.

B. THE FIRST CYCLE OF EACH OF THE ELEVEN FORMAL TESTS TOGETHER WITH THE SPECIFIC CHANGES THAT WILL BE MADE IN REPRINTING THE TESTS IN 1917

The complete report gives next the exact problems used in the first cycle of each test. From this statement teachers of algebra can thus see exactly how many different arrangements of material are offered in each specific operation. There are also listed the exact changes that are to be made in each problem. To understand this discussion thoroughly the reader should secure copies of the tests and compare each change with the data of Table I.

C. METHODS OF MEASURING ABILITY TO USE ALGEBRAIC METHODS IN THE SOLUTION OF "ORIGINAL" VERBAL PROBLEMS.

Algebraic abilities are of two distinct kinds: 1. that of translating "word problems" into algebraic symbolism; 2. that of manipulating the formal operations. In the 1915 testing done by this committee the former type, ("reasoning ability") were measured by tests which required the pupil to do two distinctly different things: 1. state the verbal *problem* in algebraic form (give the equa-

tional relation). 2. work through the manipulation of the formal operations to the statement of the final answer. The result was that the incorrectness of the answer of the pupils did not indicate which type of error had been made. The revised method of testing reasoning abilities is to require the pupil to do but one thing: translate the problem into algebraic language. The ability to manipulate the formal operation is measured by the appropriate formal test. In this way our scoring is not complicated by two or more different types of mental process.

### The Design of "Reasoning Tests"

#### a. Shall they be time tests?

In our 1915 principles of design, we established the principle that efficiency of manipulation of formal operations should be measured by the number of problems of a given type that could be done in a unit of time; that is—*formal tests must be time tests*. On the other hand, since we have as yet in educational research no definite means of equating speed and accuracy in working problems, we have decided to determine the difficulty of "verbal problems" (and thus the "weights" to be used in scoring pupils) by having pupils solve them without the complicating pressure of time.

#### b. Principles of design of verbal tests.

Thus the principles of design underlying the two methods of measuring ability are: 1. For the formal operations, group together in one test all necessary arrangements of letters, symbols, etc., (observing rigidly the "style" principle) and measure the efficiency by the number of problems worked in a unit of time, (say, a minute). 2. For the verbal problems: (1) design tests of verbal problems (a score or more of such tests ought to be available eventually), ranging in degree of difficulty from very easy problems (which nearly all pupils will solve correctly) to very difficult problems (which but few pupils will solve correctly); (2) weight each problem in scoring the ability of pupils by determining its relative degree of difficulty; (3) this can be done (a) finding out the percent of a large and representative group of pupils which solve each problem correctly; (b) assuming that algebraic abilities are distributed in the general first year high school population in accordance with some known distribution curve.

Working on these hypotheses and principles, lists of verbal problems (totaling 50 in all) were drawn up covering the principal types of subject matter named above. As a result of giving the 1915 tests problems of widely varying degrees of difficulty were included. These problems were then worked by 1205 pupils distributed throughout 26 school systems, 17 of which also worked the 31 formal tests. As a result of this testing there was determined the percent of the group that worked each problem correctly. In order then to determine the relative difficulty of each problem, the assumption was made that algebraic ability is distributed fairly closely in accordance with the "normal" probability curve. (Intellectual abilities in the elementary school have been shown to follow this distribution rather closely). We recognize the possible existence of many factors which tend to make the secondary school curve skewed to the high end of the scale. Almost nothing is actually known of the amount and direction of their influences, however. The best "practical" guess that can be made at the present time as to the distribution of scholastic abilities, is that it corresponds closely enough to the curve of error to warrant using the well worked out properties in our design).

Let the Curve of Error represent the distribution of algebraic abilities in the pupils represented by our 26 school systems. The base line then represents a "scale of algebraic difficulty" ranging, let us say, from nearly a ability to nearly perfect or 100 percent ability. The area between the curve and the base line represents the number of pupils in our entire group. If we divide the base line into any number of parts and erect upright lines at the points representing these parts we could determine, from the properties of the normal

curve, the number of pupils that ought to be found between these distances in the base line.

In the same way we could determine what percent of our group of pupils should be found distributed between the zero point on the base line and any other point. Since the normal curve has the property that it actually meets the base line only at infinity we are forced to set our 0 and 100 points arbitrarily, by deciding how large a percent of the entire group we may drop off at both ends of the base line.

Taking as our unit of measurement on the base line, sigma, the "standard deviation" of the distribution, (indicated graphically on Diagram I), and laying it off 2.5 times each way from the mid-point of the curve, gives us 5 divisions (which may be conveniently divided into 10 divisions corresponding "practically" to our public school marking system). In doing this we are throwing away only .62 of one percent of our pupils at each end of the base line. If this .62 of one percent is thrown into the middle of the curve where the individuals are more closely grouped, it is a negligible factor. Calling the point 2.5 x sigma from the mid-point 0, and making the successive points 10, 20, 30, etc., to 100, we now have a practical working "scale of algebraic difficulty" over the successive points of which the corresponding percents of our pupils may be indicated. Doing this, we see in Diagram I the proportions of our group of pupils that correspond to various degrees of difficulty on the baseline. Thus a problem which is failed by — percent of the group fails at the point marked 85; that failed by — percent is scored —, etc., throughout the list. To enable us to mark in an accurate way, a table has been computed in which the baseline has been divided into 500 parts.

Verbal list A is printed herewith as representative of the scoring of the 51 problems that have been worked by our entire group of pupils. Each of the 51 problems has been scored for difficulty.\*

The problems in each list range from very easy to very difficult by approximately equal steps. They are scored on an absolute percentile scale from 25 to 85. The outstanding deficiency is found to be: no problems were included in our list of 51 harder than 85 on this scale (assuming a normal distribution of ability) or easier than 25. The problems at the low end of the scale were estimated incorrectly to be so easy to solve that all pupils would be able to work them. It was found that no problem showed less than 10% of failures and no problem showed less than 3% of successes. The committee is now initiating a thorough going attempt to have large numbers of pupils solve several hundred problems. From these solutions we shall be able to extend the present list, and add many more.

#### D. THE FUNCTION OF ALGEBRA TESTS:

Algebra tests may have two functions: (1) they provide a yard stick for measuring the results of instruction and for determining the relative efficiency of teaching and the progress that teachers and pupils are making; (2) their more important function is that of diagnosis; they reveal difficulties in learning and point out needed changes in teaching emphasis.

#### (1) *Measuring the Results of Instruction in Algebra in 27 School Systems by Means of the Tests.*

The formal tests I to II have been given in the following 27 school systems:

<i>Cities in Illinois</i>		
°Rossville	°Marshall	°Cairo
°Robinson	°Lincoln	°Benton
°Bradley	°Highland Park	°Watseka

\*Complete lists of verbal problems may be secured from H. O. Rugg, School of Education, The University of Chicago.



Pekin	°Henry	Waukegan
°Paris	Gibson City	°Decatur
°Palatine	°Divernon	°Joliet
°Oak Park	°Chicago Heights	
°Mt. Olive	Charleston High School	Muskogee, Okla.
°Mt. Carmel	Charleston Normal Sch.	°Mankato, Minn.
	°Carbondale Normal	

In those marked ° the verbal tests were also given. In addition to these 17 the verbal tests were also given in the following eight schools:

Crane Technical High School, Chicago,  
 Parker High School, "  
 Englewood High School, "  
 Carter Harrison High School, "

and four schools which returned papers with no names. The average number of pupils taking the tests in each school was about 50. The total number of pupils solving the formal tests was 1182; the total number solving the verbal tests was 1295.

From the detailed records of the results of this testing in 27 school systems we give in Table II, five typical sets of scores; namely, that of,—1, the best school; 2, average of the upper third (9 schools); 3, the ninth school; 4, the average of all the schools (27 schools); 5, the lowest school. These five scores on each test, both for accuracy ("Rights") and speed ("Attempts"), show the range of attainment for representative algebra instruction, the best and the poorest attainment and a tentative standard (for the formal processes) which we would like to set before teachers of algebra.

Table II

First Year Efficiency in Algebra. (Rights)

Norms of attainment in eleven formal operations as determined by: 1,—attainment of the most efficient high school; 2,—average attainment of the upper third of 27 schools; 3,—attainment of the ninth school, i.e., the lowest school of the upper third.

*No. of Problems Worked Correctly per Minute.*

	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6
Score of most efficient school.....	13.15	5.39	3.24	4.05	1.42	11.84
Average scores of upper third of 27 schools .....	10.95	4.79	2.73	3.50	0.84	10.66
Score of ninth school .....	9.97	4.40	2.44	2.94	0.53	9.85
	(18 schools were below this attainment)					
Average of 27 schools was.....	9.65	3.81	2.20	2.84	0.54	9.19
Score of poorest school was.....	6.12	2.15	1.23	1.71	0.17	4.28
	Test 7	Test 8	Test 9	Test 10	Test 11	
Score of most efficient school.....	2.75	1.97	5.28	2.76	0.86	
Average of upper 3rd of 27 schools	2.02	4.16	3.91	1.60	0.73	
Score of ninth school .....	1.73	5.92	3.35	1.19	0.62	
	(18 schools were below this attainment)					
Average of 27 schools .....	1.37	7.91	2.76	1.09	0.63	
Score of poorest school .....	0.51	1.97	0.12	0.10	0.25	

Table III

Speed in Working Formal Problems (as shown by number of problems attempted)

Norms of attainment in eleven formal operations as determined by:

- 1,—Attainment of the most efficient school
- 2,—Average attainment of the upper third of 27 schools.
- 3,—Attainment of the ninth school, i.e., the lowest school of the upper third.

*No. of Problems Worked Correctly per Minute.*

	Test 1	Test 2	Test 3	Test 4	Test 5	Test 6
Score of most efficient school.....	14.54	6.26	4.23	4.57	3.00	13.36
Average of scores of upper third of 27 schools .....	11.59	5.80	3.50	4.14	1.91	12.46
Score of ninth school.....	10.68	5.51	3.24	3.87	1.16	11.51
(18 schools were below this attainment)						
Average of 27 schools .....	10.36	4.94	3.02	3.60	1.14	11.16
Score of poorest school .....	6.50	2.82	2.20	2.40	0.49	7.91
	Test 7	Test 8	Test 9	Test 10	Test 11	
Score of most efficient school.....	3.47	1.44	7.27	4.19	1.08	
Average of scores of upper third of 27 schools .....	2.88	2.50	5.80	3.23	0.95	
Score of ninth school .....	2.63	3.87	5.23	2.82	0.83	
(18 schools were below this attainment)						
Average of 27 schools .....	2.35	3.05	4.85	2.71	0.81	
Score of poorest school .....	1.40	1.44	2.80	1.48	0.47	

*The Average Attainment of the Upper Third of the 27 Schools as the Tentative Standard.*

There have been many suggestions of late that the average of the entire group be taken as standard practice. We believe that the average of the entire group is too low a standard. It is contributed to by many schools of a very low instructional efficiency. On the other hand, in finding the average of some upper group we set a standard contributed to only by schools that have maintained a high level of instructional efficiency. To take the average of the upper nine schools means to discount the best attainment (of the high school, by allowing for possible unusual conditions which might lead to the very best score), and yet to set a standard that has actually been exceeded by four, five, or six schools. In case any teacher wishes to compare her scores with those of the 9th school (whose record has been exceeded by 8 schools) those scores are included here.

To make clear the striking differences in the speed and accuracy with which pupils manipulate different formal operations Diagram I is submitted. The very large percentage of "rights", (of the problems attempted), together with the large number of problems worked per minute in the case of Tests 1 and 6, lead to the conclusion that present methods of instruction in the removal of parentheses and in the use of exponents leads to satisfactory automatism of these operations. Pupils have reduced the manipulation of the parenthesis to a high state of efficiency. Even in the case of exponents, however, 15% of errors are made on the average.

On the other hand, the score of the poorest school was but slightly more than half that of the average of the upper nine. In fact, in all remaining tests, the score of the poorest school is less than half that of the average of upper third. In some it is only  $\frac{1}{5}$  to  $\frac{1}{6}$  of the standard score. Such low levels combined as they generally are with low efficiency in "translation" processes, (see Table III), certainly call for closer supervision of instruction. As pointed out in last year's report, they indicate in some cases at least, a lack of teaching emphasis on certain operations with a corresponding greater emphasis on others.

This question of teaching emphasis in the case of very good and very poor schools is further illuminated by tracing the record of individual schools in each of the different operations. If this is done it will be found that the three poorest schools fall in the lowest third in all but two tests. The two best schools fall in the upper third in all but two of the 11 tests.

The scores for all remaining tests (except tests 1, 2, and 6) point out definite lack in making automatic those skills necessary to success in using algebraic methods in original solution. Note, for example, the original scores for test 5,—fractions; test 7,—quadratics; test 8,—graphs; test 9,—radicals; test 10,—practical formulae; test 11,—simultaneous equations. The upper group in each case shows what may be regarded as a fair degree of speed but almost universally shows a woeful lack of accuracy. We believe that *instruction in these operations should lead to automatic efficiency. Under such a condition, recurring mistakes in a class would be impossible, accidental mistakes would occur but be very rare*, (e.g., mistakes in reading, writing, and rare mistakes in arithmetic). The test at least reveals the results of instruction in these processes.

(2) *The Relation Between Efficiency in Automatic Processes and Efficiency in Reasoning Processes.*

Teachers and administrators who have been loath to adopt "measuring methods" in their school practice and who have hesitated to introduce drill exercises, do so on the ground that such a procedure will "mechanize" teaching. This same scepticism has been commonly expressed as a result of our 1915 report on algebra,—the point of view of the writer and the implications of the report certainly having been misunderstood. The 1916 testing was, therefore, planned to take account of this question. Seventeen school systems took the eleven formal tests and also the verbal or reasoning tests. Table IV gives the comparative ranks of each of the 17 schools in both types of test. To permit a composite comparison of ability of the two types, the rank of each of the 17 schools has been determined for accuracy in each of the eleven tests. A tabulation was then made to give the aggregate ranks of each school. The list was then reranked, calling the school that had the lowest number of aggregate ranks 1, the next lowest 2, etc., throughout the list. The final comparison of ranks is shown in Table IV.

The 1st, 9th, 16th, 10th, 2nd, 7th, 3rd, 8th, 6th, 15th, and 17th schools in the "reasoning tests" occupy ranks in the "formal tests" equal to these or not displaced by more than 3 places in 17. That is, 11 of the 17 schools stand almost in the same relative position in reasoning efficiency as in formal efficiency. Of the whole 17 schools only 2 show a distinct reversal of position in the two types, schools N and P. In view of the preponderance of evidence showing high positive correlation between these two types of processes we are unable to account for the status of the data on these two schools. Of the remaining 4 schools, G is displaced four places, R, 5 places, and K, 7 places. For those interested in correlations we may say that by Spearman's Footrule method (with 17 cases any coefficient has little validity, hence we may as well use a rough approximate method as the more accurate Product-moment method) it is .59, admittedly a higher correlation.

Careful study of our complete data leads us to the conviction that those teachers who have been most successful in developing skill in manipulating the formal processes have also been most successful in developing ability to "translate" verbally stated problems into algebraic symbolism. We regard this as pertinent to the question of "mechanization" of the teaching process. We believe that it emphasized the main point we are trying to make: namely, that with carefully planned practice periods, using scientifically built up practice material, teachers will be still more effective in developing "original ability".

Certainly without the aid of scientifically planned practice devices, teachers who have been most successful in doing the one have very generally been



most successful in doing the other. We have no reason to believe, from our present detailed data, that teachers who drill their pupils to a relatively high state of "formal efficiency" do so by neglecting the higher thought processes in algebraic solution. The teachers, furthermore, have done this without the aid of carefully differentiated drill exercises. (They have followed, in the main, the traditionally planned textbook organization of theoretical presentation and "problem exercises".)

We take the position that much greater correlation might come about then through the aid of carefully designed practice exercises which put the chief emphasis in practice upon the difficult processes, saving time for more detailed training in those types of solution that call for analysis discrimination and other higher thought processes. Testing pupils' ability to manipulate algebraic operations does not lead to a general blind "mechanization" of the teaching process. It leads to an intelligent understanding of *what* operations ought to get the most drill and relatively how much they ought to be drilled; in a word, *differentiated drill takes the place of blind wholesale drill such as will ensue if one follows the text book organization as a sole guide.*

### (3) *The Relation Between Speed and Accuracy in "Formal Efficiency".*

Table V in the Complete Report gives the rank of each of the schools in number of problems attempted and the number right. The high degree of relationship between speed (represented by "number of problems attempted") and accuracy (represented by "number of problems right") will be evident to the reader. The schools ranking high in speed are very generally the schools ranking high in accuracy. In Test 5, which we will take at random, the Foot-rule correlation gives  $R = .70$  or  $V = .89$  by Spearman's transmutation formula. By supplying the detailed data in Table V we do not need to discuss the material in detail here. The conclusion is clear that speed and accuracy in these formal operations go hand in hand.

We feel that this point is of great importance in the methodology of teaching. From individual experimentation in the class-room, the writers are convinced that speeding up class work conduces to greater accuracy in manipulation of formal operations. The results of testing pupils in 27 schools confirms our class-room experience.

Thus, the teaching program we would lay out before teachers is contributed to by the findings of the last sections: first,—*drill pupils daily in the formal operations by stressing the most difficult and the most important processes.* (We know the most difficult processes, and they will be taken up in the next section. We do not know the *most important processes*, however. The Illinois Committee on Standards has set as one of its tasks for the next year of research, the determination of the answer to this question.) Second, drill pupils under "time conditions". *It should be made "second nature" to manipulate the different formal operations under the pressure of "time". Life situations continually demand it,—the school should constantly prepare for it.* Again class room experimentation of blackboard and seat work done by the writers leads to this conclusion.

At this point let us call to mind the steps of our general program. We have stated the aim and outcome of teaching algebra; classified the content carefully into fundamental operations and types of problems; designed tests for each fundamental operation and for verbal problems, establishing definitely our principles of design and procedure; given the tests to large groups of pupils, set up tentative standards of speed and accuracy for each operation and made it possible to compare the practice and efficiency of a teacher or a school with the efficiency of "best schools", and discussed the "yardstick" function of tests, the relation between formal efficiency and reasoning ability, and the *relation* between speed and accuracy.

(4) *The Chief Function of Standardized Tests in First Year Algebra: Diagnosis.*

We said that tests have two functions,—1, measurement of abilities in order to establish and compare attainments; 2, diagnosis of difficulties of individual pupils, and the greater of these two functions is the latter.

*We are primarily interested in ways and means of improving instruction in first year algebra*,—only incidentally interested in establishing standards or norms of attainment. The norm of attainment is of value only as it spurs the teacher to a high standard of class teaching; the test is of value only as it points out principal typical difficulties that pupils face in learning algebra. If it is properly designed, that is, if it measures *specific processes*, it can be made to do this.

*Pupils' Errors in First Year Algebra.*

Pupils make two principal kinds of errors,—1. Accidental errors, (i.e., errors of reading, writing, following directions, arithmetic, etc.); 2. Recurring errors. Recurring errors supply a means of determining exactly which types of problems, operations or processes pupils have not mastered, provided the tests are rigidly designed on the "cycle" or "rotation" principle. Thus, in diagnosing difficulties in "learning" *it is the recurring errors that are significant*. They reveal which types of operation have not been mastered. The *Standardized Tests* submitted herewith, designed as they are on the principle of recurring types of operation, *reveal exactly which are the typical difficulties pupils face*.

Table VIII

Complete List of "Recurring" Errors for Each Test, together with Frequency and Percentage of Occurrence.

(Each error in this list has occurred more than once upon the paper of some pupil. The numbers in the first column opposite each error, indicate the *number of pupils* (out of a "random selection" of 200) who made their particular error *one or more times* in the test. The numbers in the second column indicate the percent of all pupils making "recurring errors", that made that particular error.)

Test I

No. of error	No. pupils making error one or more times	Per cent of all "Recurring" errors
	I	II
1 Arithmetic Errors .....	15	35.7
2 Omission of Symbols, Signs, or Terms.....	6	14.3
3 Errors of reading or writing .....		
4 Errors in Use of Signs in Multiplication		
a. Minus Sign preceding ( ) .....	14	33.3
b. Minus Sign preceding First Term Within ( ).....	7	16.7

Test II

1 Arithmetic Errors .....	5	6.6
2 Omission of Symbols, Signs, or Terms.....	1	1.3
4 Errors in Use of Signs in Multiplication.....	10	13.4
5 Errors in Use of Signs in Addition.....	2	2.6
6 Errors in Cross-products .....	20	26.7

(Note:—It may be due to carrying over rule for product of sum and difference; made by pupils who got product of sum and difference correctly.)

7	Use of Product of Two Numbers Instead of Twice the Product .....	9	12.0
8	Inability in Specific Operation Tested .....	15	20.0
9	Failure to Square Literal Factor with Exponent greater than 1 .....	13	17.4
Test III			
1	Arithmetic Errors .....	33	47.8
8	Inability to grasp Principle of Substitution.....	3	4.4
16	Squaring Product of Literal Factor Instead of the One Designated .....	22	31.0
11	Using Exponent as Coefficient and vice versa.....	2	2.8
12	Adding Factors Instead of Multiplying Them.....	9	13.1
Test IV			
2	Omission of Factors.....	4	4.3
3	Errors in Writing.....	7	7.4
4	Errors in Use of Signs in Multiplication.....	2	2.1
8	Positive Inability to Factor.....	37	39.4
13	Incorrect Division by Monomial Factor.....	1	1.1
14	Factors such that the Sum of the Cross-products is Incorrect .....	20	21.3
15	Factors give Correct 1st and 2nd term, but incorrect 3rd....	4	4.3
16	Failure to Recognize Monomial Factor.....	14	14.8
17	Failure to get Highest Monomial Factor.....	5	5.3
Test V			
1	Arithmetic Errors .....	28	18.4
1a	Arithmetic Error of this type, $-n.o = n$ .....	8	5.2
3	Error in Writing.....	3	1.9
4	Errors in Use of Signs in Multiplication.....	4	2.6
5	Errors in Use of Signs in Addition.....	28	18.3
8	Inability in Specific Operation Tested.....	27	17.7
18	Failed to Change Signs if Numerator preceded by - sign....	27	17.7
19	Multiplied Only One Side of Equation by L. C. M.....	16	10.5
20	Error in Use of Sign in Transposition.....	4	2.6
22	Error in Division (Result Inverted, e g. $13x = -1$ , $x = \frac{-13}{1}$ ).....	1	2.6
23	Multiplied Numerator by L. C. D. $\frac{2}{4-2x} - \frac{5}{-20+5x^2} = 0$ ; $4-2x \quad -20+5x^2 = 0$	$\frac{2}{2-x} - \frac{5}{2+x} = 0$ ; 7	4.6
Test VI			
1	Arithmetic Errors .....	11	8.0
3	Errors in Writing.....	6	4.4
8	Inability in Specific Operation Tested.....	21	15.3
25	Incorrect Use of Exponents in Multiplication		
	a. Multiplying Exponents instead of Adding them.....	9	6.5
	b. Subtracting Exponents instead of Adding Them.....	4	2.9
	c. Failure to Add $X^7 \cdot X = X^7$ .....	1	0.7
26	Incorrect Use of Exponents in Involution		
	a. Adding instead of Multiplying.....	45	32.4
	b. Subtracting instead of Multiplying.....	1	0.7
	c. Dividing instead of Multiplying.....	3	2.2
	d. Raising to a power instead of multiplying.....	18	13.1
	e. Failure to raise all possible factors to required power .....	16	11.6



27	Incorrect Use of Exponents in Division		
	a. Adding instead of Subtracting.....	1	0.7
	b. Multiplying instead of Subtracting.....	2	1.5

## Test VII

8	Inability in Specific Operation Tested.....	32	21.6
28a	Find only one root.....	28	19.0
	b One Root Correct; Other Incorrect.....	2	1.3
14	Incorrect Solution due to: Factors such that sum of cross-products is incorrect.....	71	48.0
29	Incomplete, e. g., $x^2-81=$ , $x-9=0$ , $x+9=0$ .....	9	6.0
30	Incorrect Use of Formula Method of Solution.....	5	3.4
31	Solutions by Factoring Left Member; right member not $0:n^2 - 7n = 12$ , $n(n-7) = 12$ .....	1	0.7

## Test IX

1	Arithmetic Error .....	14	9.7
8	Inability in Specific Operation Tested.....	88	60.6
24	Incomplete, $\sqrt{8} = \sqrt{4 \times 2}$ .....	2	1.4
32	Left Factor of Same Power as Degree of Radical $\sqrt{32} = 2\sqrt{8}$ ; $\sqrt{a^3b^4} = b^2\sqrt{a^3}$ .....	23	15.9
33	Error in Factoring; Perfect Square Factor Correct, other incorrect ( $\sqrt{32} = 4\sqrt{4}$ ; $\sqrt{50} = 5\sqrt{5}$ .....	4	2.8
34	Does not multiply numerator by rationalizing factor $\sqrt{\frac{3}{5}} = \frac{1}{5}\sqrt{3}$ .....	8	5.5
35	Failed to take Square Root Although Factoring Correctly $\sqrt{x^5y^8} = x^4y^8\sqrt{x}$ .....	2	1.4
36	Factored Correctly, Took Square Root Correctly; Placed Radical Sign Over Wrong Factor.....	4	2.8

## Test X

3	Error in Writing.....	4	2.5
8	Inability in Specific Operation Tested.....	12	7.5
20	Errors in Use of Signs in Transposition.....	4	2.5
	hl		
22	Error in Division. Result Inverted, e.g., $V = lwh$ , $w = \frac{hl}{v}$ .....	44	27.3
24	Incomplete .....	1	0.6
37	Transposing Factors Instead of Terms.....	12	7.5
38	Interchanged Factors of Both Sides of Equation.....	30	18.6
39	Error in Selecting Coefficient of the Unknown in $L = \frac{Mt-g}{t}, M = \frac{Lt}{t-g}$ (considers (t-g) as coefficient of M) .....	51	31.6
40	Divides a Term of Numerator by the Denominator (e. g., $L = \frac{Mt-g}{t} = M-g$ .....	3	1.9

## Test XI

1	Arithmetic Errors .....	25	50
1a	Arithmetic Errors of the type $n \cdot 0 = 0$ .....	1	2
3	Errors in Writing.....	4	8

8	Inability in Specific Operation Tested.....	3	6
19	Multiply only one side of Equation by L. C. M.....	2	4
20	Error in Use of Signs in Transposition.....	3	6
23	Multiply Numerator by Denominator in Clearing Fraction.....	1	2
24	Incomplete (e. g., $-y=3$ ).....	2	4
41	Errors in Use of Signs in Subtraction.....	4	8
42	Errors in Use of Signs in Division.....	1	2
43	Adds Left Member, Subtracts Right Member or vice versa.....	3	6
44	Adds Corresponding Members When He Should Subtract.....	1	2

## Table VIII Gives:

*A Complete List of Recurring Errors Made by 100 Pupils on Each of the 11 Formal Operations, Together With the Frequency of Occurrence and the Percent That the Recurring Errors of Each Particular Type are of all Recurring Errors Made.*

This list is complete for the pupils whose work was studied. It has been compiled by the writers of this report, who scored and judged carefully every problem on each of the 11 tests for each pupil. In many cases the combined judgment of the two writers was made on particular errors. The list can be used by teachers as a definite guide to help eliminate these particular errors on the part of their pupils. Knowledge as to which are the most difficult operations will lead to wise methods of eliminating the errors in such cases.

Let us summarize the outstanding facts concerning the recurring errors made on formal operations.

Test 1. Removal of parentheses. A fairly high degree of efficiency maintained. Of the mistakes one-half were in use of signs. Of these twice as many were made when the  $-$  sign is used outside the parenthesis as when the  $-$  sign precedes the first letter inside (with  $+$  sign outside.) (The Committees' drill exercises take account of this). One-sixth of all pupils make an arithmetic mistake on this problem.

Test 2. Special Products. One-fourth of all recurring mistakes are on cross-products. This is confirmed by the predominance of error No. 14 in Test 4. A very large group of pupils fail to square literal factor when the exponent was greater than 1, and another considerable group use product of two numbers instead of twice the product.

We may dispose once for all of Error marked No. 8 in each test—"Positive inability in the specific operation test."

We give below the percent of all errors made that show inability to use the operation in question in each test.

## Tests    Percent

2	20	This table reveals that there is a very large number of our pupils that are absolutely unable to handle certain combinations
3	4.4	of the following operations: Special products, factoring
4	39.4	(complete quadratic) fractions, exponents, quadratics and rad-
5	17.7	icals. This percentage, it should be noted, may be deceptive
6	15.3	for in some cases it includes only a small proportion of all
7	21.6	errors made. It is striking at least as showing the cases in
9	60.6	which positive inability to try the problems stood out.
10	7.5	
11	6	

Test 3. Substitution. Relatively few errors. Of those made nearly one-third are due to "squaring product of literal factors instead of one designated." Practically half of all errors are arithmetic.

Test 4. Factoring. 39% of all recurring errors show positive inability to factor particular types of factoring problem (mostly complete quadratics). The outstanding errors are found with error 14, "factors such that sum of cross-products is incorrect," and 16, "Failure to recognize nominal factor."

Test 5. Errors in the use of signs again predominate, e. g., in addition, in multiplication, failure to change signs if numerator preceded by - sign. Also need for emphasis on multiplying both sides of equation by L. C. M.

Test 6. There are three outstanding errors in use of exponents, incorrect use of Involution (adding instead of multiplying, raising to power instead of multiplying, and failure to raise to required power). There are other scattering errors which recur rather frequently.

Test 7. Pupils are prone to find only one root. Their most outstanding mistake again is in cross-products—getting factors such that sum of cross-products is incorrect.

Test 9. 60 percent of all recurring errors show positive inability to handle particular kinds of radicals, e. g., of the type  $\sqrt[3]{\frac{2}{3}}$ .

especially. Of the other recurring errors, pupils commonly leave factor of same power as degree of radical. They also do not multiply numerator by rationalizing factor.

Test 10. Three typical recurring mistakes: 1—Errors in division, results inverted, e. g., in  $v = lwh$ ,  $w = \frac{hl}{v}$ ; 2—interchanging both sides of the equation;

3—errors in selecting coefficient of the unknown, e. g., in  $L = \frac{Mt-g}{t}$ ,  $M = \frac{Lt}{t-g}$ , pupil considers (t-g) as coefficient of M.

Test 11. Aside from purely arithmetic errors, solutions of simultaneous equations of the type represented here has been rather well automatized. Errors in use of signs stand out again. The Committee would like to call particular attention to the frequency of recurrence of errors in the use of signs in all tests where they are possible.

#### *Methods of "Differentiated" Drill Will Improve Instruction in the Formal Processes.*

The giving of standard tests is only the first step in the program of improving instruction. The tests, however, if corrected by the teacher will lead to definite knowledge as to the types of problems upon which she needs to drill her pupils. Great insight can be obtained by the teacher, into the difficulties of her pupils if she will take the trouble to examine the tests carefully and classify the mistakes made. Typical recurring ones will stand out clearly and these she can drill upon in a differentiated way.

The Standardized Tests have offered the Committee an opportunity to extend their service to teachers of algebra with a thorough-going and complete classification of the recurring errors made by pupils. The tabulation of errors and discovery of errors should be followed up by careful design of drill exercises to aid in the elimination of the weaknesses in learning. This, in turn should be supplemented by thorough experimentation to determine the frequency with which particular operations should be drilled, the distribution of the different types of arrangement in the different exercises, best ways of presenting material, etc. Thus the fifth step in the program has just been taken by the Committee.

We are now organizing a thoroughgoing experiment in the Parker High School, Chicago, in the attempt to do the things outlined above. Practice exercises have been organized in a tentative way, separate exercises for each operation. Those exercises have emphasized the most frequently recurring errors roughly in proportion to their difficulty. This has been determined tentatively from Table VIII. Samples of these exercises are being exhibited at the con-



ference and we wish thorough discussion of the members on this important matter.

From this point on real progress in improving algebra instruction can be made only by teachers of the subject working in their class rooms. We urge, therefore, the undertaking of a very thorough cooperative experiment by teachers of algebra along the lines marked out by this report. The Committee on Standards submit this report on formal Tests as final and wish to assure the members of the Section that the verbal tests will be available in the same complete fashion by the end of the year. The first four steps of our program have been carried through. We now urge your cooperation in our attempt to extend the work in the direction of detailed class room experimentation, keeping adequate records of progress and making available to other teachers of the subject the findings of your investigation.

#### Standardized Tests in First Year Algebra. (Verbal Problems).

(Graded on an absolute scale of difficulty from 0 to 100, in accordance with two assumptions: 1—Among first year High School students the distribution of algebraic ability approximates the "normal" probability curve; 2—the difficulty of problems varies as the percent of pupils able to solve the problems correctly.)

#### *Verbal List A.*

#### Score

- 85 A train running from Chicago to Denver at average speed of 40 miles an hour, takes 3 hours longer to make the run than one running at 45 miles an hour. What is the distance from Chicago to Denver?
- 80 If a cistern can be filled by one pipe in  $x$  minutes and emptied by another in  $x+5$  minutes, what part of the cisternful runs in one minute if both pipes are open?
- 75 Find two numbers whose sum is 51, such that if the greater is divided by their difference, the quotient is  $3\frac{1}{2}$ .
- 70 Twice the width of the Pennsylvania station in New York exceeds its length by 80 feet. 4 times the length exceeds the perimeter by 700 feet. Find the dimensions.
- 65 If a boy  $4\frac{3}{4}$  feet tall casts a shadow  $4\frac{1}{2}$  feet long at the same time that a school building casts a shadow  $17\frac{1}{2}$  feet long, how high is the school building?
- 60 A father 54 years old has a son aged 9 years. In how many years will the age of the father be just 4 times that of the son?
- 55 Two boys play at teeter. One weighs 100 pounds and sits 6 feet from the point of support. The other weighs 120 pounds. How far from the point of support must he sit in order to make the board balance?
- 50 What number has the property that when multiplied by  $\frac{5}{6}$ , the result is greater by 1 than when multiplied by  $\frac{4}{5}$ ?
- 45 If the width of a rectangle is  $W$  increased by 10 and its length  $L$  increased by 20, write the equation for its perimeter.
- 40 8 times a certain number equals 45 diminished by the number. State the equation by which you would find the number.
- 35 If  $W$  and  $L$  are the width and length of a rectangle, write the equation for its area in terms of  $W$  and  $L$ .

- 30 If you represent a number by  $x$ , how will you represent 5 more than 5 times the number?
- 25 Express the following verbal statement in algebraic form: The square of a side plus five.

The discussion of this report was led by Dr. L. T. Wilson, University of Illinois. The essential points of emphasis are herewith presented. Tool problems furnish only a means of testing, not an aim. The difficulty of a problem is determined by the number of students solving the problem and not by the teacher's judgment. The committee giving the report favored nominal, but not "long" division in the tests. It also recommended testing and developing arithmetic accuracy. There is danger of losing the reasoning processes in making work automatic. The process only can be automatic. Too much stress may easily be placed on literal problems, as, for example,  $a^2a^3=?$  and  $2^22^3=?$ ; the answers given by many students are  $a^5$  and  $4^5$ . Students may discover the cyclic character of the tests in which case he who solves two problems may not be twice as efficient as he who solves but one problem. In order to make their schools rate well, it may be an incentive for a teacher to coach for examinations in those schools in which the tests are to be given. Inasmuch as one person does the teaching while another gives the examination the weight attached to different problems may involve an injustice to the students.

A general discussion followed Dr. Wilson's discussion. The main points developed appear in the following paragraphs.

Mr. Comstock of Bradley Polytechnic Institute at Peoria, suggests that care is needed in placing emphasis on automatic processes. Students obtain the same results from  $\sqrt{a^2b^2}$  and  $\sqrt{a^2+b^2}$ ; the emphasis should be placed on the square root of a *product* and not of a group of letters. The care can be shown to best advantage in the language with which the students are taught.

Mr. Risley of Milliken University pointed out the wrong done by superintendents who hire incompetent teachers. He added to the emphasis placed on language by emphasizing an insistence on good English.

Mr. Taylor, Charleston Eastern Normal, asked for more intensive drill in teaching. A test should be included for division to bring out

$ab \div 1$

such errors as  $\frac{\quad}{a} = b \div 1$ .

Dr. Rugg stated that it is true that schools in which the students obtain results quickly are schools in which the students are most nearly accurate.

Mr. Bracewell, Springfield, aptly suggested that these tests may show what subjects have been unemphasized by teachers. Teachers should not discontinue drill on those subjects which seem easy for the students but should intensify drill on the hard subjects.

The following resolution, presented by Mr. Comstock, was adopted. Resolved that the Conference express to Mr. Rugg and the committee a deep appreciation for the report given and that the conference express the desire that the committee be continued in the work which it has so successfully begun.

Mr. Bracewell of Springfield presented the accompanying paper at the afternoon session:

The Springfield Laboratory Recitation Plan. The Third Degree in Supervised Study.

In coming before you this afternoon it is important that we get the proper attitude towards each other. The plan that I shall present to you is not a perfected one. It is rather an idea still in its crude form. An idea upon which we have spent some effort and are still striving to mould into a practical working plan. Neither would I have you believe that what I have to say must be accepted in the whole or rejected in the whole. There are two types of promoters. The one who is sure that he has something of value and unqualifiedly recommends. The other is one who thinks he has something of constructive criticism. Springfield hopes that she is of the latter type.

Those who have come expecting a technical discussion of methods of teaching Geometry will excuse me, if for a time, I deal with the principle of teaching in general. It is an easy matter to tell what should be accomplished in good teaching. It is a relatively easy task to tell how to accomplish any one of these ends separately. The real test lies in our ability to make an improvement in some one thing without sacrificing things of greater value which we have already gained. The educator who wrecks disaster upon the public is the man who displays in all its glory some achievement in a given direction and fails to reveal the evils that attend. The Springfield Laboratory Recitation Plan has as its objective certain definite ends; from the very beginning there have been "costs". Some of these costs have been great. We have tried to face them squarely and diminish them. We have succeeded in a measure and are still succeeding. To us, the task does not seem impossible.

The plan that I am advocating is the work of no one man. Neither is it limited in its application to any one subject. Mr. Allen as many of you know, was, while at Wichita, Kansas, the first principal to apply the study program that is popularly known as supervised study. Mr. Allen is one of those who make a distinction between a program providing for study in a school room with a teacher present and supervised study. In an effort to gain a better adjustment between the individual student and his work, his fellow student and his teacher, Mr. Allen placed before Mr. Barnes and myself the underlying principles of the plan that I shall give you. Mr. Barnes undertook to apply these principles in the teaching of Algebra and I in Geometry. Since that time the plan, modified and revised, has been taken up by the entire mathematics department, and the department of Biology, History, Latin and English.

In order to better discuss the Springfield Laboratory Recitation Plan I shall show you how it works as applied to Geometry. Since the plan in its complete form demands the double period I shall at first present to you our supervised study schedule. Our school day begins at 8:30 and ends at 4:00 with an hour and a half intermission at noon. This period, deducting time for announce-



ments and passage to class, is divided into four periods of 85 minutes each. Two periods in the morning and two in the afternoon. Since it is best to have each teacher teach five classes and to provide a possibility for some students to take five subjects, we have arranged a five period schedule for a four period day. This is accomplished thru a floating period as may be seen by studying the accompanying chart.

Monday	5	2	3	4
Tuesday	1	5	3	4
Wednesday	1	2	5	4
Thursday	1	2	3	5
Friday	1	2	3	4

Each class recites four time a week at a definite period with the exception of the fifth, or floating period, which replaces the other periods in the order shown. This schedule, if the principle thinks best, enables a student, to take five subjects. It allows each teacher to teach five classes a week without requiring him to teach more than four classes in any one day. It makes possible an eighty-five minute period without overworking the teacher; without requiring a single addition to the teaching staff; without a dollar's increase in the cost of instruction.

The work of each class under this plan is conducted in two rooms, in charge of which are two teachers and a student clerk. One room is called the laboratory. Here all preparation is made under the supervision of the laboratory teacher. The student clerk is an advanced student who grades daily work as it comes in, checks errors, at once and gets the papers back to the student while the matter is still fresh in his mind. The laboratory teacher devotes his whole time to supervising the work of the student. He may conduct brief individual oral recitations upon subjects in which the student is found to be weak. He aids students in advanced work collectively or individually as he sees fit.

In the laboratory room the watchword is individuality. Individual application, individual initiative, individual progress, are emphasized above everything else. We are striving to make it possible for the student to come into the room, take up his work, make his own assignment, take time to do his work thoroughly and pass on. If he meets with difficulty that he can not overcome we are prepared to help him. If his thinking is wrong this is discovered by the clerk and the teacher can correct his thinking before it has led him far into difficulty. No student is compelled to move at a pace which prevents thorough work. No student is caused to lose the spirit of the race by the slow progress of a class that is not his equal in mental ability and energy.

In Geometry the work is entirely suggestive. We place before the student the problem, show him the goal of his thinking, and direct his thinking to that end. In the beginning we may have to do much of the thinking for him. This, however, is done less and less as the student develops in initiative and self reliance. Even in the beginning we place the work before him, often without a drawing, always with out the "given" and "to prove". Instead of giving him the proof step by step we write one or more paragraphs discussing the principles involved. The student then must first read the theorem with a view to making the drawing. In doing this he is able to determine the "given". He is then compelled to read the theorem again to determine the "to prove". Instead of attempting to justify each step of the author's proof by referring back to the author's drawing, the author's statement of the "given" and "to prove", or to some theorem, postulate or axiom suggested by the author on the margin, the student is compelled to master the theorem in its every detail and have a full understanding of its meaning before attempting its proof. In the end the student writes out a complete proof of the theorem and hands it to the clerk. This proof is essentially the student's own work. He has been compelled to transfer the suggestions into a well organized proof, giving a reason for each statement drawn from his own knowledge of previous work. In the beginning we do not

strive to tell the student less. We strive to get him into the proper methods of thinking and order of arrangement. As he develops his reasoning power we make the suggestions fewer in number and of a more general character. The important thing is that the student in transferring his work from the paragraph suggestive form, to the definite statement with proof form, is compelled to do more than memorize. He has been compelled to think. He has been made to consider the wording and meaning of the theorem. He has been led to look upon the work done as his own.

You will see that the work done in the laboratory emphasizes individual assistance, individual initiative, individual thinking, and individual progress. It will be urged that no method in teaching is safe which does not provide for definite review, a chance for oral expression and an opportunity for socializing the work by bringing students together in collective work of some kind. In this we agree entirely. In fact our experiments have proved to us first of all that the ability to study out a principle and turn in correct work, based upon that principle, does not mean that the work has been mastered in the sense that it has become a part of his thinking apart from that principle. He has been made to think in terms of that principle only. His view of it is a narrow one. We have found that there must be a chance for oral discussion and that the matter of time and the value of competition demand that it be given thru collective recitation. We find that it is necessary to have discussion in the nature of reviews that bring together the application of different principles and link them up in usable combinations.

We are more and more convinced that tests based upon a definite portion of work are not a relic of barbarism but are a very essential factor in good teaching.

For these reasons we have divided the work into two parts. The work of preparation is done in the laboratory under the supervision of the laboratory teacher. The work of recitation consists of collective testing with a view to securing oral expression; review of work done in the laboratory, with a view to more complete mastery; application of principles to new work, with a view to originality in thinking. This is done in the recitation room in charge of the recitation teacher. Since the work done in the laboratory is not assigned work, the work done in recitation can not be upon assigned work. The work done in recitation may be regulated in many different ways. At present we are finding it most practical to divide the students in groups on the basis of progress made in the laboratory. On each Friday evening the laboratory teacher gives to the recitation teacher the minimum amount of work done in the laboratory at least one week previously. If there are fifty in the class, the first group should consist of the twenty pupils who are the farthest advanced. The second group should consist of the next twenty. In neither of these groups does it ever happen that recitation is held upon work, the principles of which have not been worked out in the laboratory. We find this follow-up recitation very effective. These recitations are planned to accomplish a definite purpose, are arranged consecutively and may be limited to the most important matters. Thru their summary review and application of principles worked out in the laboratory by the individual student, they can be made a powerful force in laying proper emphasis. The real difficulty lies in the third group. You will note that this is a small group. Here the students move at such varying rates and have such a complex of difficulties that work with them is slow. It is sometimes in the nature of a review, sometimes the development of new principles and is often a matter of tutoring. In the latter case the student brings his manual with him and works in the recitation room under the direction of the recitation teacher. This group does less reciting but its members receive more individual attention.

These, then, are the general principles of the system. Working them out and applying them is a matter of detail and adjustment that must be adapted to the needs of the school. In our school we have two recitations a day. The first group recites the first half of the period on the first three days of the week.

The second group recites the second half of the period on the last three days of the week. The third group recites the second half of the period on the first day of the week and the last half of the period on the last day of the week. This plan gives us a forty minute recitation. It will be remembered that these recitations are held in groups of students having similar abilities: that they are based upon work the principles of which were worked out by the individual pupil.

In the field of commerce every enterprise has its profits and its costs. So in the field of education, each plan which has in view the solution of a definite problem tends to raise new problems or exaggerate old difficulties. The Springfield Laboratory Recitation Plan has raised its problems. Some we have solved in full. Others have been solved in part. We are still thinking as we work. We do not hope to reach a state of perfection. Our contention is that the way to perfect a scheme is to constantly keep before you the dangers that attend each move and it is in this same spirit that I shall discuss with you some of our difficulties before presenting the things that we are striving to accomplish.

The difficulty lies with the student who does not care. For the student who wishes to learn but finds the work hard our plan is far superior in that he can set his own pace. He is allowed to master his work as he goes and is not bewildered as a result of a pace that compels, half learned and poorly assimilated facts and principles. The student who is weak because he is out of school is helped in that he is able to do his work consecutively. The student who is weak because he is mischievous is helped in that the rivalry among students for progress leads to a better spirit of work. The student who is weak because he has leaned upon his stronger friend is helped in that he can not get unguarded assistance so easily when the work of preparation is done as an individual rather than as a class. The additional enthusiasm found in the class, the sense of shame at being left by his fellows, the additional time for individual assistance and promoting by the teacher are the whips that we are now using to spur on the boy who does not care. This does not always succeed. The problem is made to appear greater since the facts stand out clearly. Good work and poor work can easily be recognized. The weak student appears weaker than under the old method. The question might be raised, however, as to whether our weak students are weaker than under former methods or have we in the past given students credit for work which they did not do. Is it not possible that work which we have accepted in the past as passing consisted in fact of poorly assimilated facts, gleaned from fellow students and the unwitting teacher, never mastered but retained for a time until in recitation or written tests which follow immediately, it could be answered back parrot-like as his own? This system makes for individual responsibility in that a student's failure is his own and his success is his own.

The argument most commonly urged against attempts at individual teaching and individual progress is that the teacher cannot keep in mind the progress of fifty students each working at his own assignment. I will grant that it is quite impossible for a teacher to make fifty assignments each day, neither can he check up the work of fifty students. Under the Springfield plan the teacher as a regular procedure makes no assignments and does only a certain phase of testing. The work is all divided into exercises which are arranged in a definite order. This work is placed either in manuals supplied to each student or upon cards catalogued in regular order. Each exercise is preceded by a discussion of the principles involved which prepares the student for the work to be done. The student makes his own assignment. All work done in the laboratory is checked up by the clerk and properly recorded. These records show the standing of each student and are indispensable to both the laboratory and recitation teacher. The work of the teacher then is to advise with students in difficulty. He demands oral recitations of those who continually hand in incorrect work thus showing that they do not think clearly. He takes papers that are found to be incorrect and fixes the error in the mind of the student so that it may not



be repeated. Last and most important he is the head of a workshop made up of fifty individuals and it is his business to see that all moves smoothly. It should be borne in mind that this is a laboratory where lessons are prepared and not a recitation room, that students are to be guided in their work and thinking, not summarily forced to follow specific assignments in a definite routine order.

It is also argued that individual work is not socialized. This argument we have met squarely. Nothing has stood out more clearly as a result of our work than the fact that students must recite as a group. They must discuss again and again in class, principles that they have developed separately. We are more than ever convinced that there is a definite need for oral and written tests. As a result of this firm belief we have laid special stress upon work in recitation. Our recitations are forty minutes in length and are held three times a week. The recitation teacher is relieved of all care except that of how to plan his work and how to teach.

It is often argued that to separate slow students from the rest of the class is bad in that it humiliates him and deprives him of the inspiration that comes from being associated with those who work successfully and work with a purpose. Those who argue this seem to forget that it is discouraging to be compelled to move at a pace that prevents thorough work and leads to consequent confusion and failure. They do not realize that things must be merely suggested to the bright student and given piece meal to the weak. To fail to make this distinction is to do each type of student a definite wrong. This distinction cannot be made under our present methods. Advocates of the "lock step" practice fail to consider the fact that all the inspiration and joy of working is taken from the bright student who is made to walk side by side with the plodder. As an actual experience, I found in a class of first semester Geometry, which I had taught under the usual methods and had promoted to second semester's work, that the brightest student working under this method accomplished just four times as much work in the first two months as the poorest student and that the work had been done more than twice as well. These students had been compelled to do the same amount of work each day, to get it in the same way, to recite in the same manner and to take the same explanations: In the end each had been graded between seventy and ninety-five percent and had each received the same credit. There was evidently something wrong somewhere.

Yet the questions raised are there and must be answered. I will admit the harmful results that come from segregating a group of delinquent students and would emphasize the inspiration that comes from competition with others. Our system does not bring about the complete segregation of the delinquent students in the sense that they are branded as defectives, placed to themselves for special treatment, separated completely from all those who can and will and placed in a special room with a delinquent specialist in charge. For such a student there is no inspiration and little hope. Quite the contrary this student is left in the same room, works at the same work, under the same laboratory teacher and recites to the same recitation teacher. He is classified, it is true, but he himself is responsible for his standing as it is his own lack of ability, lack of industry or irregularity of attendance that has classified him. He does not lose the inspiration of working with those who are busy. He does not lose but rather gains the spirit of competition. He is not discouraged by being forced to compare himself with the best in the class but rather with the fellow just above him and the fellow just below. The objections to classifications have been met and their merits have been retained.

One of the things most frequently argued against individual methods of instruction is that it demands too much of the teacher. Before answering this objection, as it applies to our system, let me suggest that to attempt to take fifty individuals and adapt the work and movement of the class to their individual needs is an ambitious undertaking and holds out a cool reception to a

lazy teacher with a "laissez faire" attitude towards his work. It is not a fair proposition to take the effort required to work in a slipshod manner and compare it with the effort required to give due and timely aid to the weak and proper mental gymnastics to the strong. The system which we are advocating demands work. It demands careful adaptation to the subject matter and to the local conditions. If there is one thing that the plan demands more than another it is system. We do not guarantee that our system will thrive under mismanagement or that it will take less effort than a program that attempts little. What we do claim for it is that under good management it will afford opportunities for excellent teaching and that it will produce greater results in proportion to the energy expended than the other system.

Yet I would not discourage any one who is ambitious to obtain results in teaching. My own experience is that I am less tired at the end of the day under this system than I was in attempting a less ambitious program under the regular methods of instruction. Teaching under this method is more intensive than it was under the old method and the day is a longer day. At four o'clock one has given his best to the work and is ready to quit. And he may quit. Under the old method I took home papers to grade, here I take home nothing. Instead of taking a book and preparing a lesson I am more apt to think of better ways of conducting the work in the laboratory. Instead of working out a systematic lesson plan I am more apt to think out the best way to develop and apply principles in recitation. I have some time to study class records and form an opinion as to the difficulties facing individual students. On the whole I spend much less time on school work out of school than formerly. Instead of feeling that my time from Monday morning until Saturday night belongs to the school I am more inclined to feel that my evenings and my Saturdays are essentially mine. I may use them for social purposes, for general reading or professional work, but in any case there is that satisfaction and rest that comes from a sense of freedom from duty. The work during the day is strenuous. It is also fascinating. It takes one's reserve energy and gives him longer time in which to regain it. It demands of him all that he has and turns him out at the end of the day a tired but free man.

These then are the "costs" of the system; I have not tried to misrepresent them. I have shown you the difficulties that have come before us and how we have attempted to solve them. We are still working. The system at first appears to be a maze of detail but properly regulated the very detail itself leads to harmony. The first few weeks presents its confusion but with it comes the joy of the teacher and the co-operation of the student in overcoming it. Discipline has not been a factor. Wherever work is the rule of the day discipline is the rule of order.

Having dealt squarely with the "costs" of our system I shall show you the things for which we are really striving. During these days one hears much of supervised study. It has become a pedagogical slogan. Every teacher has his plan, every writer his theory and every principal his program for the proper supervision of study. Accompanying this slogan is its counter slogan of "teach the pupil to think". All this is very good but to him who will investigate, it is plain that we have in the majority of cases no well defined idea of how to bring the teacher and the student together for a systematic direction of his habits and methods of study. It is equally plain that to argue that the student should be taught to think does not make the student a better thinker.

It is an easy matter to look over our schools and see the things that need to be done and it is an equally hard thing to tell how they are to be accomplished. The careless manner in which assignments of lessons are frequently made, the ease with which students lose instructions and forget, the all too frequent poor home conditions and conflict of interests, make it plain that there is a great need for improvement in the time, place and environment for study. The Idealistic note that seems to ring out in a plan that provides for all study to be done at school, in the environment of study and under the

intelligent direction of the skilled teacher, all go to make the idea of supervised study a popular one. This is unfortunate in that it has given the impression that all assignments are poor and that all home conditions are bad. It has also given rise to the impression that all that is essential to good work is that it is to be done at school with a teacher present. Nothing could be more unfortunate since this prevailing idea takes away the fine advantages to be derived from study in well regulated homes and blinds our sight to the real merits of supervised study. The truth is that some homes furnish excellent advantages for study. On the other hand, so called supervised study, under the direction of the unskilled teacher, often resolves itself into a systematic process of unguarded assistance, while under the less industrious one it results in gross neglect with its consequent idleness, confusion and disorder. Bad as may be the conditions for study in many homes they can in no way be compared to the harmful effects of eighty-five minutes of collective idleness. In placing the emphasis of supervised study upon a program providing for study done in the presence of a teacher we are subjecting ourselves to a host of errors with no certainty of gain. We are sowing to the wind the advantages of home study and reaping the whirlwind of disorder, idleness and confusion that are the product of our misplaced emphasis.

Do not misunderstand me. I am in sympathy with a program providing for supervised study. I would merely distinguish between the name and the reality. There are two phases to supervised study. The one deals with the mechanics of bringing the student into the proper environment for study. The other presents the problem of placing the teacher in a position to direct the student to his own growth and development. It is important that a good program be worked out as this is a pre-requisite to good supervision. The thing to be kept in mind, however, is that proper supervision and the mere presence of a teacher are not one and the same thing. The Springfield Laboratory Recitation Plan is the result of a determined effort to bring the student into such relation with his fellow, his work and his teacher as to necessitate thoroughness in work, independence in action, clearness of thought and strength of character. We demand thoroughness in that the student is compelled to study the manual until he is able to discuss the principle involved, do application work correctly, discuss with the class at a later date the correlation of these principles and finally produce well written test papers as evidence that the subject is mastered. We secure independence of action in that each student is compelled to work separately from his neighbor, be orally tested upon work accomplished and finally present a specific amount of application work creditably done to the student clerk before he is allowed to proceed to other work. Clearness of thought is compelled in that the work is given to the student in the suggestive form and must be independently rewritten in the direct form. He must master it so as to insure his ability to apply it to new work in recitation at least a week later. Strength of character is developed by causing the student to make his own assignment, be responsible for his work since it must be his own, be responsible for his rank which is a result of open competition with others under exactly the same conditions; and in the end accept success or failure as a result of his own initiative, energy and ability. We would not minimize the value of a well planned schedule for supervised study. We would value it highly in so far as it affords opportunity to present the work to the student in such a way as to compel its mastery and under conditions that will develop the originality and independence for which our schools were planned.

In a previous paragraph, I mentioned the advantages of grouping students according to ability. Our plan is based upon the assumption that students differ largely in their ability to think and in the ease with which they grasp new ideas. This difference demands that students be given different periods of time in which to prepare work, and that the work be presented to them in entirely different ways. The bright student will get things quickly. To hold him upon work that is quickly mastered leads to sluggish thinking and lack



of industry. The able student will master work presented to him suggestively. To give it to him, mentally pre-digested, is to deaden his perception and dull his intellect. On the other hand the slow student must have time to absorb each new idea. In his case speed leads to lack of thoroughness, confusion, loss of interest and failure. He is slow to perceive and must have things presented to him piecemeal or he does not grasp any part. These two types of students cannot be dealt with in the same manner without doing a great wrong to one or the other or to both. One of the greatest defects of our teaching in the past has been our attempt to compel the same standards of attainment for all. It may be argued that we have not expected this but our practices have been the same as if we had expected it. The statement so frequently made that we do not give test to find out whether the good students can pass but for the benefit of the doubtful ones tells the whole story. The frequent practice of excusing from tests students who maintain a certain percentage of accuracy in daily work is an outgrowth of this same fact, namely, that we must give tests that are tests to the weak student and the strong are not tested. This is bad in that it does not place the good student upon his mettle and in that it makes it easy for him to secure a grade that is a false standard of his degree of mastery of the subject. It may be a good thing for students at the end of the semester to be graded between 70 and 95%. Even this in no way will account for the great difference in abilities between the best and poorest student. In the tests, however, there is no reason why the best student and one near the bottom should not receive a similar grade providing that those grades stand for different standards of requirement, a requirement varied so that it taxes equally the mentality of each.

We would then lay special emphasis upon the great range of abilities that are found in the same class. We think it of great importance to give the good student work in such form, allow him to travel at such a rate, demand of him such a degree of mastery, understanding and ability to make application that will bring out the best that is in him. It is needless to say that this standard cannot be attained by all. The poor student will never attain this standard. We can help him. He can learn valuable information if it is properly placed before him and sufficient time given for its absorption. We can improve upon his habits and sharpen his keenness of perception, but he will not attain the standard of the excellent student. This difference is recognized in the laboratory in the difference of time given to the mastery of new material and in the nature of suggestions and assistance given. It is recognized in the recitation room by an entirely different manner of conducting the recitation and in the degree of understanding and ability to make application demanded. It is not the business of the public schools to turn out a host of students having attained a given standard and to fail the rest but rather to give to the public, students strong or weak, each having been developed to his own highest standard of perfection.

In dealing with the system thus far I have dealt with it as it applies to study in general. I have tried to show that it promotes industry in that each student is working in competition with himself and every other student in the class. The slow student is not discouraged by an assignment that he knows he cannot master and the quick student is not forced into idleness for lack of work to do. It leads to thoroughness by forcing the student to master each step before proceeding to the next. It is adjustable in that it allows the work to be presented in the way demanded by the students of different ability. It secures individuality of action by compelling each student to prepare his work independently of the other fellow. It promotes independence of thinking and personal responsibility in that the student is lead to take the initiative in all preparation. This continuous open competition with other members of the class makes him to see clearly that his successes and his failures are his own. He finds in his class work that success must be earned, and thinking that is of real value must have something in it that he can call his own. It is this

last aim that seems to me to be of supreme importance in the study of Geometry.

If there is any weakness that to me stands out more clearly than another in our thinking today, it is the sin of unconditional agreement with folks. If there is any study in our schools that is taught more than another in such a way as to promote this habit or attitude of unconditional assent of opinion it is our method in teaching Geometry. In order to make myself clear allow me to say that altho we have made rapid progress in independent thinking in politics, yet the great majority of folks vote the opinions of others that have never sunk deeper into their own convictions than their prejudices. We allow our standards of morals to be set by impressions that we gain from the stage, the screen and the popular press, impressions made striking, not by the thought back of them, but by the emotional way in which they are presented. In matters of religion we are jealous of the truth, and place as a standard of orthodoxy the opinions deeply implanted in our minds by our ancestors. This is so evident that it gives rise to what might be termed the grandmother test of orthodoxy. Now my contention is not that the political leader may not be in a position to think more clearly than the average citizen, that the popular idea of proprieties is false or that our inherited ideas in religion are wrong. My contention is that right or wrong an opinion is a dangerous one unless it has in it an element of ourselves. We are mental slaves in so far as we accept unconditionally the opinions of others. We are free and independent minds in so far as we assimilate the thoughts of others and express them after having made them our own. They may not be original with us but they have been made our own and carry with them our convictions as well as our assent. It is only in so far as we think for ourselves that we have joy in thinking and take pride in our thoughts. The thoughts placed in this paper may be poor thoughts. They may even be false, yet they are my thoughts in that they have been made a definite part of my convictions and I take pride in thinking them and find joy in expressing them because they have this element of myself in them.

It is important that we look for the source of an evil rather than be content with merely depicting it. It is agreed that people in general do not think for themselves. This was at first attributed to lack of sufficient information to form a basis for thinking. Our great free school system was founded, more than for any other reason, to give free information to all, so that all might think for themselves. We have developed our school system and information is now within the reach of all, yet we do not think. As I have endeavored to show, this is in the majority of cases, because we have given to the student only a smattering of learning and this often of an impractical nature. However, even our first rank students too frequently lack originality and do not make first rank members of society. The real fault lies in our attempt to give information and our neglect or complete disregard as to the method of giving it. It may be true that information furnishes a basis for thought but it is doubly true that, the ratio of a man's information to his ability to think clearly, independently and practically is not constant. Original thinking is largely a habit and our ability to assimilate and not reflect thoughts depends upon the manner in which we gain them.

A review of our methods will show that our goal in teaching has been the imparting of information and the test for having succeeded is the ability of the student to reflect the information acquired. It is bad enough that this should be true in any subject but it is particularly bad that it should be true in Geometry where it is said that "Geometry trains pupils to think". May I raise the question as to the truth of this statement? What percent of your pupils in Geometry became actual thinkers? How many were able to solve original problems independent of you and the other members of the class? What percent failed? What percent learned by laborious effort to repeat the author's demonstration of the theorem, memorize definitions, follow your own

or the classes' demonstration of a few originals and were finally given credit on industry? Has Geometry in the past made thinkers of all who received a credit for a year's work in it? Has it not in a great many cases deadened the intellect and bewildered the mind? My contention is that to force a student to study Geometry for a year when it is clearly to be seen that that student cannot think in Geometric terms is a positive injustice. We have made a great step in advance when we have taken Geometry out of the requirements for graduation. We will make a still greater one when we refuse to allow a student to continue its study when we know that he is doing so to his positive detriment.

The fact that Geometry is hard has led authors to work out theorems step by step with the reason for each, make the construction, and even state the "given" and "to prove". All that is required of the student is that he read, assent and memorize. Since originals are hard they are kept out of the first part of the work. For weeks the student does nothing but memorize definitions, make drawings that he is told how to make, agree with the author that his drawings are good and his demonstrations correct. If I tried to imagine a more inadequate preparation for the original work that follows in Geometry I could not. If I tried to think of a greater injustice to the student than to coax him along until it is too late to drop him and then be compelled to drag him thru a year of bewilderment, without an element of real worth but rather a positive detriment to himself, his class and his teacher, I would probably fail. I do not contend that Geometry should be made as hard in the beginning as in the end. To do so would be disastrous. My contention is that the same type of thinking should be placed in the beginning of the work that is found later and that those who cannot be brought to that type of thinking be compelled to drop the course before they have made too large an investment of time and effort?

Wherein then would my method differ from that of the average author? To make this plain I will give you the proof of a theorem as found in one of our latest publications and follow it with the same theorem and its discussion as found in the manual devised for our plan.

Discussion as found in a new standard text.

"In an isosceles triangle the angles opposite the equal sides are equal.

*Given* the isosceles triangle ABC, with CA equal to CB.

*To Prove* that angle A equals angle B.

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|---|------------------|
| Proof 1. Suppose the line CD drawn so as to bisect angle ABC. | Sec. 98          |
| 2. Angle ACD equals angle DCB.                                | Sec. 37          |
| 3. Triangle ACD and BCD are congruent.                        | Sec. 92          |
| 4. Hence angle A equals angle B. Homologous angle             | Sec. 94. Q:E:D." |

Discussion as found in our own manual.

"Ex. 64-T. In an isosceles triangle the angles opposite the equal sides are equal.

1. Read the theorem and underscore the important words. Draw the figure required by theorem and check the parts that you know to be equal. Check the parts that you wish to prove equal.

2. Having first determined what is given in the theorem and what is *to be proved*, draw a straight line bisecting the angle at the vertex and cutting the base. Can you prove the triangles formed by this line congruent? If so what would be the advantage?"

You will note that in the first theorem the author assumed that the student cannot visualize the figure from reading the statement of the theorem. He presumes that the student cannot separate the given condition of the theorem from the resulting condition. He tells the student the whole story from beginning to end, step by step and suggests where the reason for each step may be found. It is not necessary for the student in the beginning to read



the theorem, to note the figure or to consider what is given and what is to be proved. The fact of the case is the average student never does. He begins with the first statement and justifies each step of the author by referring back to the sources suggested in the margin. It is one continuous assenting to the statements of the author. Since it is not a reasonable thing to suppose that the author might be wrong he does not question. He assumed the attitude of unconditional agreement, assents to everything and is probably so well pleased with it that he memorized it in fear that he might not do so well himself if he tried to repeat the discussion.

It is not my contention, in my own discussion of the theorem, that the student is told less, altho I believe this to be true. My contention is that it is placed before him in such a way that he is compelled to assume the attitude of thinking for himself. He must read the theorem in order to visualize and draw the figure. He must read it again with some thought in order to determine the "given" and the "to prove". He cannot escape this. As a result, by the time he reaches the discussion, he has memorized the theorem and has the point of departure and the resulting condition well in mind. He knows what he is trying to do. He has been placed in the attitude of mind of the investigator and is not met with a lot of statements of pre-digested thinking to change that attitude. It may be argued that the student has done no more original thinking in the latter case than in the former. I do not believe that this is true. Granting, however, that it may be, he has nevertheless been compelled to take the work in this suggestive form and reproduce it in the Euclidian form. All the while he has been placed in the attitude of one thinking for himself. This attitude once developed will stay with him in later theorems and in originals where he must do real thinking. It is not so important that our thinking be new or that our thoughts be different, as it is that we assume the attitude of thinking, that we justify our thoughts in the light of things that are placed before us rather than blindly assent to the statements of others.

It might well be asked, if the work is harder under this method. I will answer both yes and no. For the student who has any aptitude for analytical thinking whatever, it is at first somewhat harder, changes to equal difficulty and in the end he finishes with a great deal better grasp of the subject and much more ease. To the student who under our previous method failed or blindly struggled through the course, the work is impossible. Do not confuse this statement which applies to Geometry with the general plan as applied to other subjects. In Algebra the percentage of failures is greatly diminished. I believe that this is true in the other departments. In Geometry, however, it must be said that the number of failures during the first six weeks is greater. Once past this stage the student is far less apt to fail. He now finds the work a pleasure rather than a burden and in the end is pleased with his course and deserves his credit. He has accomplished more than a college entrance requirement which is the goal of too many who study Geometry.

This increase in the number of failures during the first weeks in no way appeals to me as a weakness but rather as a decided advantage. Those who fail do so in time to take up other work or to devote their time to other subjects. They are in every case the type of student who would have failed eventually or one of those who repeat the work again and again because they feel that they have so much time and effort invested that they cannot give up. May I repeat that to allow a student to do this is a positive injustice since it takes his time and effort, robs him of the joy of accomplishing things, and daily confronts him with the idea that he is a plodder. In the end he is rewarded with a few facts which he cannot apply and quickly forgets. He receives credit which he has not earned, and knows that he has not earned. Any plan that will pick out these students during the first few weeks is a positive good. A plan that in addition to this will take the other vastly larger group of students and make responsible thinkers out of them, men and women who throughout life will think in terms of Geometric procedure, is a plan worth while.

The question might be raised as to the possibility of applying this method in other schools. I will say that it can be applied in largely the same way in any school that does require its teachers to conduct more than five classes a week and has two teachers in a department. It can be applied in a similar way even if there is but one teacher in a department. This would demand a proper arrangement of rooms and the aid of an advanced student. We have used this method and find it satisfactory. The student receives a credit for his work. The training is excellent and is fully deserving of a credit. One problem that confronts us is the matter of making our manuals. In the past we have mimeographed them and had them bound. This is unsatisfactory but will have to be continued until the plan has been perfected and its worth established to the satisfaction of a sufficient number of schools to justify their publication.

In conclusion allow me to say that we have not presented to you a made-to-order scheme with a view to your unconditional acceptance or approval. We believe in a suggestive method of teaching Geometry. I have suggested to you the general outlines of our plan to make more effective the work done in our schools. We would make information of real value by demanding that it be acquired in sufficient thoroughness to become a foundation for later thinking. I would have Geometry become a source of training in logical thinking by presenting it in a form that will lead the student to acquire that attitude of mind and method of procedure which in later life will cause him to investigate and conclude instead of read and agree. There is nothing that can be of greater importance than directing the student's procedure in Geometry so that he will act here in solving his school problems as we expect him to act in solving problems in later life. If we do not want him to go thru life acting out the wishes of others or responding only to his prejudices we must develop early the habits of making opinions his own before he acts in response to them.

The discussion, led by Mr. Beatty of Urbana, brought out the following facts: In only one case has it been necessary to restrict students listening to recitations. The students who finish the course before the close of the school year may be used as clerks, allowed to study advanced work in Geometry or allowed to use the time for any other course in which it may be needed. Mr. Beatty spoke very favorably of the work done in the Springfield schools. However, many of the good results are also found in other schools not using the plan. Mr. Bracewell's idea of dividing the class into three groups for recitation is good and the fact that some students are not fitted for Geometry and should not be required to study it is very true. Placing the initiative on the student may result in loss of time. Students seem to have no more ability in originals and no more idea of the correctness or incorrectness of their work under this system than under many others.

A question by Mr. Irwin showed that Springfield has used the plan, as presented, since the autumn of 1915.

Miss Hubbard, Carlinville, spoke very highly of supervised study. Her question pointed out the fact that the student clerk employed is never of the same class as those students whose work is corrected by that clerk.

pointed out that in the first month the teaching is much the same as under ordinary methods. Not so much is accomplished in the first semester by the new plan but in the second semester very much more is accomplished than under the ordinary plan.

Mr. Joel of Danville stated that a combination plan carried out by one teacher has proved successful.

Many opinions were to the effect that six weeks is not long enough to convince a teacher that certain students are entirely unfit to ever study a subject.

Dr. Rugg pointed out the danger of making unconditional statements until figures are available to verify these statements.

The report is respectfully submitted.

W. H. WILSON, Acting Secretary,  
University of Illinois.

#### MODERN LANGUAGE SECTION

The Modern Language Section of the High School Conference met in Room 218 University Hall at 9:00 A. M. Nov. 24, 1916; Miss Blenda Olson, of Macomb, presiding.

The first talk of the morning was by Dr. John D. Fitz-Gerald of the University of Illinois on "The Minimum Requirements for the Course of Study in Spanish". Dr. Fitz-Gerald referred to the standard as set by the College Entrance Examination Board, considering it from the standpoint of the examiner as well as the college teacher. He quoted as follows from the recommendations of the Board:

The requirement in Spanish, which follows the form and spirit of the recommendations made for French and German by the Committee of Twelve of the Modern Language Association, is based upon recommendations made by a committee of that Association in December, 1910.

##### THE AIM OF THE INSTRUCTION

At the end of the elementary course the pupil should be able to pronounce Spanish accurately, to read at sight easy Spanish prose, to put into Spanish simple English sentences taken from the language of every-day life or based upon a portion of the Spanish text read, and to answer questions on the rudiments of the grammar, as indicated below.

##### THE WORK TO BE DONE

During the first year the work should comprise:

1. Careful drill in pronunciation.
2. The rudiments of grammar, including the conjugation of the regular and the more common irregular verbs, the inflection of nouns, adjectives, and pronouns, and the elementary rules of syntax.
3. Exercises containing illustrations of the principles of grammar.
4. The careful reading and accurate rendering into good English of about 100 pages of easy prose and verse, with translation into Spanish of easy variations of the sentences read.
5. Writing Spanish from dictation.



During the second year the work should comprise:

1. The reading of about 200 pages of prose and verse.
2. Practice in translating Spanish into English, and English variations of the text into Spanish.
3. Continued study of the elements of grammar and syntax.
4. Mastery of all but the rare irregular forms and of the simpler uses of the modes and tenses.
5. Writing Spanish from dictation.
6. Memorizing of easy short poems.

The emphasis should be placed on careful thoughtful work with much repetition rather than upon rapid reading. The reading should be selected from the following: A collection of easy short stories and lyrics, carefully graded; Juan Valera, *El pájaro verde*; Perez Escrich, *Fortuna*; Ramos Carrión and Vital Aza, *Zaragüeta*; Palacio Valdés, *José*; Pedro de Alarcón, *El Capitán Veneno*; the selected short stories of Pedro de Alarcón or Antonio de Trueba.

Every secondary school in which Spanish is taught should have in its library several Spanish-English and English-Spanish dictionaries, the all-Spanish dictionary of the Royal Spanish Academy; one or more manuals of the history of Spanish literature, such as that by Fitzmaurice-Kelly, and Ticknor's *History of Spanish Literature*.

The speaker then suggested that all teachers of Spanish in Illinois should try out the work scheduled by the Board as above given and report to the Conference next year.

The next paper was by Miss Josephine Doniat of the Carl Schurz High School, Chicago, on "Minimum Requirements for the Course of Study in French". She spoke of the need of standardizing the minimum requirements for French.

#### MINIMUM REQUIREMENTS FOR A THREE-YEAR COURSE IN FRENCH

Josephine Doniat, Carl Schurz High School, Chicago.

For the last few years, there has been a general cry for better organization and standardization in Modern Language teaching. This call has been answered fairly well in German. Syllabi have been prepared and adopted by various associations and school systems. They have been changed and tried out and changed again, so that now, one has a fairly definite notion of what is meant by German I-II-III.

The teachers of French, however, still feel this need very keenly. It is somewhat more difficult to settle the matter for them, as there are not so many of them. Even in most of the large Chicago high schools, we find only one teacher of French, while there may be four or five teachers of German. In order to ascertain what other teachers are doing, therefore, teachers of French must go out of their building and this always means a little more trouble and sometimes real inconvenience. The result is that even within the same school system and sometimes even in the same school, we find teachers working along totally different lines. On the other hand, in the University High School of Chicago, we find the work so highly organized that in every section of the various classes exactly the same lesson is assigned each day!

Most of us feel that we do not want to be bound so rigidly as to be hampered in individual expression, yet we do want certain minimum requirements, so that these things at least may be taken for granted. But here we are at once confronted with a difficulty.

One very important phase of the question, one that is frequently overlooked

by those who make out syllabi and also by school authorities who make out a school program, is the pupil's stage in advancement. This difficulty is felt in German, but is more serious in French. French is very frequently the second foreign language taken up, and yet in some of the larger high schools and many private schools, it is begun as the first foreign language in Freshman classes. In these two kinds of classes, the work must necessarily be of an entirely different character. These two classes of pupils are often found in one class, but this certainly is most unfortunate and unpedagogical.

For convenience, I shall take as my basis a class in which the majority are in their second year at high-school, as this is the class with which I am most familiar. At the end of the first year, a class should

1. pronounce reasonably well;
2. understand simple French that they hear on the first hearing—I mean not only the ordinary questions and directions given the class-room, but an easy story told or read by the teacher.
3. They should be able to read the easier Daudet stories, l'Abbe Constantin, easy comedies and other things of the same grade. I mean by this, that, in a study period of 45-50 minutes they should be able to prepare 1½-2 pages of text by themselves in such a way, that in class they can answer simple questions on the text, tell passages that are easy, ask questions on the text in French, write these questions and answers.
4. They should be able to use in oral and written work the present, past indefinite, imperfect, future and conditional of any regular and about 25-30 irregular verbs. They should feel sure of the gender of the nouns commonly used and use the correct form of the article, partitive possessive, demonstrative, adjective with them, that.
5. Lastly, they should be able to write a very short simple composition, in which they tell in their own words the story or part of the story which they have read.

In order to reach this, the following must be done in the first year:

1. Pronunciation.

There must be a few simple rules of phonetics and a great deal of practice in pronunciation in concert and alone. Much time and embarrassment can be saved by the teaching and the application of a few easy, practical rules of phonetics, especially for the formation of u, eu, the nasals, the principles of muting and liaison. These rules should not take the place of imitation, but should help the student to imitate the correct sounds as formed by the teacher.

2. Conversation.

It is my opinion that the best results are reached by having about two weeks of conversation without any book whatever. If this conversation includes the vocabulary of the First Year Book, then the time which seems lost, will quickly be made up by the pupil's rapid comprehension of the first pages of his book. The conversation should be informal in character and yet thoroughly planned and graded. It must go hand in hand with a good book and needless to say, a book which contains good material in question and answer form, saves endless time for the teacher. It is difficult to measure the amount of conversation that is given. On the one hand, there is the American teacher whose lack of fluency and mastery makes it necessary for her to plan every question and answer with the greatest precision. On the other hand, we see the native French teacher whose pedagogy does not keep pace with his mastery of the language. In his classes, the conversation amounts to a certain vocabulary exercise, which even as such is frequently of very little value, as it leads nowhere. Much valuable time is lost in poorly planned conversation lessons.

## 3. Reading.

About 40-50 pages of easy text in addition to the reading done in the First Year Book.

## 4. Grammar.

Thorough drill on points mentioned under No. 4 above.

## Second Year.

At the end of the second year, pupils should be able to prepare a reading lesson of five or six pages and to read books of the difficulty of *Pêcheur d'Islande*. *Les Misérables*, (abridged) etc. They should, moreover, be able to take up a book like *Graziella* and read it and enjoy it by themselves. They also should understand the use of the subjunctive and unreal conditions. They should know the idioms most commonly met with in reading, e. g., *avoir, beau, venir de*. They should write a composition of two pages without making too many mistakes.

To reach this end, the following should be done in the second year:

## 1. Grammar.

Review of what was taught in the first year. Thorough drill on Subjunctive Unreal conditions and Principal parts of irregular verbs.

## 2. Drill on idioms in connection with reading, conversation, and composition.

## 3. Reading.

At least 200 pages in class and one book outside the class.

## 4. Composition.

Constant practice in oral and written composition based on the readings; the writing of about 20 compositions of 1-2 pages.

## Third Year.

In the third year, there should be

## 1. A systematic review of the grammar in French.

## 2. Reading of about 600 pages.

## 3. A brief survey of French literature, especially the 17th and 19th centuries.

Prof. McKenzie announced that the Association of Modern Language Teachers had begun the publication of *The Modern Language Journal*, subscriptions for which were to be taken during the day.

Miss Augusta Krieger, of Highland Park, then gave her "Report on the results of a Year's Trial of the Course of Study Presented at the Last Year's Conference". She spoke of the necessity of such a Course of Study in these days of Standardization and that it is intended primarily not for the experienced teacher but for the new teacher. She stated that it would be a valuable aid in the certificating of new High Schools. Miss Krieger suggested that the reason pupils so often fail to pass the College Board examination is because the questions generally are based upon the translation method. This was further discussed by Dr. Fitz-Gerald, Miss Doniat, and Prof. Goebel. It was suggested by Miss Doniat that the Board prepare two sets of questions, one for students who were taught by the direct method, and another for those who followed the translation method.



The chairman announced that the discussion in regard to the Course of Study would be deferred until the afternoon session.

Miss Lydia Schmidt of the University of Chicago High School read an excellent paper on "What shall we emphasize in the High School Course in German?"

#### What Shall We Emphasize in The High School Course in German?

Lydia M. Schmidt, University High School, Chicago.

The distribution of emphasis in any course of study should be determined by the aim or ends to be attained in the course. The trend of opinion in regard to the work in German in secondary schools seems to favor the development of the ability to read ordinary German with some fluency as the main aim to be attained and the development of the ability to speak and write simple German as a secondary aim. Assuming that these are the ends in our work, the question is, How shall we organize the course in German to attain these ends? What shall we stress and on which elements shall we place less emphasis so that the essentials may receive all the attention they need?

When we say that our aim should be the development of the ability on the part of the pupil to read ordinary German with some ease and to use the language in simple oral and written discourse, we do not always realize all that is involved in this statement. The difficulties involved in the attempt to teach the pupil to speak and write even the simplest German have, I think, been generally underestimated. The speaking of a language makes necessary such a command of the vocabulary and the grammatical forms and principles that they can be used almost automatically. I think we have been too ready to assume that because English and French are taught so successfully in this way in Germany, for example, we can therefore attain the same success in the teaching of German in this country. We have been too inclined to lose sight of the fact that the teaching of a highly inflected language like German is a totally different matter.

The German pupil, accustomed to the highly inflected German, finds the uninflected English very simple and makes rapid progress in both his ability to read and his ability to speak the language. With us, however, the American pupil, accustomed to the uninflected English and often with very little training in grammar, is expected to learn to read and speak a language much more difficult than his own. To those of us who have had experience in teaching German in our secondary schools, this lack of an inflectional consciousness and this lack of training in grammar on the part of our pupils seem sometimes almost appalling in view of what we are expected to accomplish with them. It is no uncommon thing to find in our first-year classes pupils who do not have a clear notion of subject and object. It is a very common thing to find pupils who do not know the difference between a transitive and intransitive verb, who have no notion whatever of the cases of a noun or the tenses of a verb. Because of their immaturity and lack of training along grammatical lines, it is not sufficient to explain these matters to them once or twice, but it often takes weeks before their notions regarding these matters have become clarified. Yet when we make speaking one of the aims in our work, even if only a secondary aim, we set ourselves the task, as was stated before, of leading our pupils to acquire such a mastery of the grammatical forms and principles that they cannot only be recognized by the reading, but can be used almost automatically in oral and written discourse.

I think the general verdict in this country is that we have failed utterly to accomplish this. Judging from articles in our educational magazines, reports of examiners and high school inspectors, our pupils attain even such a command of the vocabulary and grammar that they can get the meaning of a page of ordinary German after they have completed two or three years of high school

work. And no one will dispute the fact, I think, that their ability to speak German lags far behind their reading ability. I think we high school teachers are only too conscious ourselves of how little we attain. It is this situation that has given rise to the question, What can we do to secure better results in the teaching of German in secondary schools?

It seems to me the solution of the problem must lie along the lines of a better, a more economical organization of the language material, and a better distribution of emphasis on the various topics comprising the course of study. Too often in the beginning textbook the aim is to give as complete a view of the grammar as is possible and, while the pupil is hurried from one topic in grammar to another, he is expected to assimilate an everchanging and continually growing vocabulary. It is astonishing to see how much, as a result of this procedure, the pupil by the end of the year has forgotten of that which he learned in the earlier part of the year and how little he remembers in the second year of the vocabulary and grammar which he was supposed to have acquired in the first year. The waste of time and energy involved in this is only beginning to be appreciated.

The first suggestion I would make as a remedy for the present situation would be that we should teach more language and less grammar. Simple, interesting German reading material should form the basis of the work from the beginning. All grammatical material should as far as possible be developed from this and all composition work (direct method exercises, questions and free reproduction) should be based on it. We are too inclined to forget that in the first year, for instance, a great deal of interesting reading matter could be given within more narrow grammatical limits than is generally the case. It is not necessary, for instance, to have any subjunctive or passive forms in the first year. There is an abundance of interesting reading material that does not contain any of these forms. It is not even necessary to use relative clauses to any extent, difficult idioms, or any constructions that may not be regarded as basic or typical.

When we come to the composition it is necessary to move within even more restricted grammatical limits. If the work in composition covers too wide a range, the result will be that the pupil will not attain the necessary mastery of those essentials of the language which are indispensable in the simplest reproduction of the reading material.

It is evident that if the pupil is to attain a speaking knowledge of German *those elements which are indispensable in the simplest reproduction of the reading material should receive the most emphasis.* Considerable experience in the use of the direct method in the teaching of German has shown that if the pupil is to reproduce the reading material even in the simplest manner possible a great many exercises must be given which will furnish drill in the following: the use of the nominative case for the subject and the accusative for the object; the use of the prepositions governing the dative case, those governing the accusative case, and those governing both the dative and the accusative case; the personal pronouns; the adjective declined with the articles, demonstratives and possessives; the use of the weak and strong verb in five tenses: the present, imperfect, perfect, pluperfect, and future, and the polite form of the imperative; and the most important modals in the present and imperfect tenses. There must be also some exercises in word order, some drill in the gender of the most common nouns, and some work in the noun declension.

In order to gain time for the extra drill needed in these topics, it becomes necessary to eliminate all elements of less vital importance. A psychological rather than a logical arrangement of the language material becomes imperative. The following topics may be omitted with advantage: the future perfect, inasmuch as it rarely occurs in the reading texts of a three-year high school course; the use of familiar address, as it is rarely, if ever, needed; and the prepositions with the genitive. No drill in the use of the relative pronoun or in the comparison of adjectives need be given in the first year and very little drill is needed

on these topics at any time in the course. Much drill in the plural of nouns is uneconomical, as plural forms of nouns occur usually only in small numbers in the reading material. They offer no problem whatever in the oral or written reproduction of the text.

The exercises by means of which drill in the elements of grammar is given should be based on the reading text in order that the vocabulary of the reading material may become fixed in the pupil's mind. Considerable experience has shown that when pupils have really mastered the fundamentals of grammar indicated above and the vocabulary of the reading material they are able to reproduce those portions of the text which have been studied intensively by means of the exercises based on them.

The work outlined above can be covered in a first year high school course. Considerable emphasis on grammar is necessary. The simple training the pupil has received in grammar and composition should be sufficient for his needs in oral and written composition in the second year. He increases his skill in the use of the language in the second year, that is, he reproduces simple portions of the reading material with greater fluency than in the first year, but he will rarely use any grammatical forms of constructions that he has not already learned in the first year. The reading material will introduce him to the passive voice, the subjunctive of indirect discourse and possibly the subjunctive of unreal condition and wish. Some exercises in the use of these may be given, but the pupil need not attain the same mastery in their use that it was necessary to attain in the use of the grammatical elements studied in the first year. Since, therefore, relatively much less time need be spent on grammar and composition, the reading, that is, the acquisition of vocabulary, should be emphasized in the second year.

The reading text for the second year should contain a vocabulary in common use. The exercises of this year should be of a character to aid especially in the assimilation of the vocabulary of the text. For only through constant use of the vocabulary once acquired will the pupil be able to retain what he has once learned.

In the third year only minor points in grammar occurring in the reading material need be taken up. The emphasis in this year should be still more on the reading and every known device that will help the pupil to make the vocabulary of the text his own should be used.

In order that the pupil may increase his skill in the use of the language, he should be required to reproduce portions of the text read. Perhaps the best results can be secured by reproducing reading material somewhat less difficult than that of the usual texts of this year. The German vocabulary grows increasingly difficult after the first year. When the work in composition is based on a simpler text the pupil's attention is not constantly divided between the vocabulary and the grammatical construction. He is free to concentrate his attention on the construction of the sentences and will, as a result, acquire more skill in the speaking of the language. His attainments will, at best, be very limited in this respect.

In conclusion I would say we should teach more language and less grammar. We should give enough work in grammar and composition to enable the pupil to interpret the texts read and to reproduce in very simple German portions of the reading material. In order to attain this end there should be a psychological rather than a logical arrangement of the language material.

There should be a more definite emphasis on the acquisition of vocabulary. In order that better results may be secured here, this work should be organized more definitely. Every device that is an aid in the assimilation of the vocabulary of the text should be used. Only in this way can we hope to attain what we have set up as the main aim in our work—the development of the ability to read ordinary German with some fluency.



Mr. Zimmerman of the Champaign High School next read a paper on "Books selected for outside reading Purposes".

Suitable Texts for a Minimum Pupil's Library for Outside Reading Work.  
R. P. Zimmerman, Champaign.

With every passing year we are recognizing more and more the value of foreign language study with reference to its cultural and practical value to this country. The great problem confronting the teacher of modern languages is how to teach a foreign language to the best advantage of the pupil. The Direct Method seems to be the most efficient method at present, because it makes the foreign word, the foreign idea in its original form the tool with which the pupil operates. He learns the language by using it and gradually learns to think in the new language. Such a method naturally proceeds more slowly in the beginning than the old translation method. It enables us, however, to introduce a very helpful measure which will hasten the process of learning considerably. This is the so-called Outside Reading Method. The pupils are given books to read outside of their regular class room work. Such a provision is especially beneficial to the more gifted child and to him of German parentage. It tends to foster the desire to read books and to establish a reading habit. The pupil studying the German language is given an opportunity to read German books just as he reads books in his own language.

All reports from schools where outside reading has been introduced are very encouraging. The pupils show a ready willingness for this kind of work, because they do not feel that it is a formal assignment. They accept it as a task which they can perform for themselves as their own work. It is not like getting a lesson for the teacher.

The reading material for outside reading should be easy, interesting, free from dialect, and in a good story form, selected from authors of recognized standing. If the material is too difficult either in the vocabulary or in complex sentence construction, or in both the pupil soon becomes discouraged. The individual ability and the sphere of interest of the high school pupil must be given all due consideration in choosing a book. In general, however, a story that abounds in life and in external expression appeals to the high-school age, while deep reflections upon life's problems and psychological contemplations always seem dry and dull.

The story with fine pathetic touches will appeal most to foreign language pupils, as all the deeper human sentiments, such as love and hate, joy and sorrow, pleasure and pain, sympathy and suffering are common properties of the human race and can be understood by all regardless of what language is spoken, while wit and humor are peculiar to every respective race or nation and can not fully be appreciated by a foreigner. Occasionally, however, a good humorous German story will add a new interest and will have its wholesome effect.

Stories from the German "Märchenwelt," the true children of the imagination, in which the most wonderful is the most natural, should also appeal to high-school pupils in the first and second year. I consider them especially valuable in our prosaic and scientific age.

The story should be German in its character, and treat of German life, habits, customs, institutions, etc., so that a student studying German may also get a knowledge of the German people and their culture.

Outside reading should begin with the third semester. I suggest the following amount to be read: 3rd semester, 30-40 st.p.\*; 4th semester, 50 st. p.; 5th semester, 60-75 st.p.; 6th semester, 80-90 st.p.; 7th semester, 100-125 st.p.; 8th semester, 150 st.p. or more.

To encourage the pupils to read more than the required amount, they might be given extra credit for such work. Five percent, say in addition to their

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\*st.p.—standard page of 300 words.

semester grade for reading twice the required amount. This brings good results. To control the reading the pupil must give a written or oral report to the teacher on the book read. In the second year it may be in German or English. In the third and fourth years it should be in German only.

The teacher must be ever ready and willing to help and encourage the pupils in their outside reading work, especially in getting started on a story, as the introduction often is difficult. It is well to have the pupils express their opinions about the story and give all due regard to their estimation of the book in making further selections for the library. When properly directed outside reading promises to be a beneficial aid in teaching modern languages with far reaching effects. It is a decided step forward in solving the problems of teaching modern foreign languages.

Below is a list of books which I have selected and graded for a minimum pupil's library. The total cost would be \$21.00.

The Minimum Library For Outside Reading in German.

SECOND YEAR

*Third Semester—*

1. Kinderfreuden—Oxford Press .....	\$ .40
2. Bunte Geschichten—A. B. C. ....	.25
3. Spyri, Rosenresli (for girls)—Heath.....	.30
4. Spyri, Moni der Geisbub—Heath.....	.30
5. Haertel, German Reader for Beginners—Ginn.....	.60
6. Der Zerbrochene Krug, Zschokke—Heath.....	.25
7. Storm, Immensee—A. B. C.....	.25
8. Die Schildberger—Heath .....	.30
9. Seeligmann, Altes and Neues—Ginn.....	.35
10. Moenchhausens Abenteuer—Heath .....	.30
11. Andersen, Bilderbuch ohne Bilder—Heath—Holt.....	.30
12. Grunow, Jung Deutschland—Ginn.....	.90

\$4.30

*Supplementary List.*

1. Till Eulenspiegel—Heath .....	.30
2. Bacon's Vorwaerts—Allyn & Bacon.....	.80
3. Stolze, Lose Blaetter—A. B. C.....	.30
4. Mueller and Wenckebach, Glueck Auf—Ginn.....	.60
5. Fahsel's Allerlei—A. B. C.....	.25

*Fourth Semester.*

1. Leander, Trauemereien—Holt or Heath.....	.40
2. Grimm, Kinder und Haussmaerchen—Heath or A. B. C.....	.45
3. Auerbach, Brigitta—Ginn .....	.40
4. Carmen Sylvia, Aus meinem Koenigreich—Heath.....	.35
5. Storm, Geschichten aus der Tonne—Heath.....	.40
6. Hebel, Schatzkaestlein—A. B. C.....	.40
7. Kurz, Zwei Maerchen (Girls)—Oxford Press.....	.50
8. Wieland der Schmid—Oxford Press.....	.40
9. Diedrich von Bern—Oxford Press.....	.40
10. Arnold, Fritz auf Ferien—Heath or A. B. C.....	.30
11. Stern, Aus deutschen Doerfern—A. B. C.....	.35

\$4.25

*Supplementary List.*

1. Guerber, Maerchen und Erzehlungen—Heath.....	.60
2. Valkmann, Kleine Geschichten—Heath.....	.30

THIRD YEAR

*Fifth Semester*

1. Lohmeyer, Der Geisbub von Engelberg.....	.40
2. Heyse, L'Arrabiata—Heath or Holt.....	.35

3.	Hillern, Hoehrer als die Kirche—Merrill—Heath.....	.30
4.	Rosegger, Das Holzknechtshaus—Oxford Uni. Press.....	.35
5.	Bluthgen, Das Peterli von Nuerenberg—Heath.....	.35
6.	Storm, In St. Juergen—Ginn.....	.30
7.	Storm, Auf der Universitaet—Holt.....	.35
8.	Tales from Hauff—Ginn.....	.30
9.	Seidel, Aus goldenen Tagen (boys)—Heath.....	.35
10.	Wildenbruch, Das edle Blut—any edition.....	.30

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 \$3.65

*Supplementary List.*

1.	Keller, Legenden—Holt .....	.30
2.	Gerstacker, Irrfahrten—Holt or Heath.....	.45
3.	Eichendorf, Aus dem Leben eines Taugenichts—Holt.....	.40
4.	Der Weg zum Glueck—Heath.....	.30

*Sixth Semester.*

1.	Hauff, Das Kalte Herz—Holt or A. B. C.....	.35
2.	Wildenbruch, Kindertraenen—Holt or Merrill.....	.35
3.	Heyse, Anfang und Ende—A. B. C.....	.30
4.	Four German Comedies—Ginn.....	.45
5.	Riehl, Das Spielmannskind, Der Stumme Ratsherr—A. B. C.....	.35
6.	Stern, Die Wiedertauefer—Heath.....	.40
7.	Rogge, Der grosse Preussenkoenig—Heath.....	.45
8.	Heyse, Die blinden—Holt.....	.40
9.	Frenssen, Peter Moors Fahrt nach Suedwest—Holt.....	.40
10.	Mogk, Deutsche Sitten und Gebraeuche—Holt.....	.35
11.	Schwarzleute—Holt .....	.35
12.	Rosegger, Lex von Gutenhag—Heath.....	.40
13.	Rosegger, Waldheimat—Heath or Holt.....	.35

*Supplementary List,*

1.	Heyse, Das Maedchen von Treppi—Holt.....	.35
2.	Keller, Dietgen—Ginn .....	.25
3.	Seidel, Leberecht Huenchen—Merrill—Heath .....	.30
4.	Stern, Geschichten von Rhein—A. B. C.....	.85
5.	Fouque, Undine—A. B. C.....	.50

## FOURTH YEAR

*Seventh Semester.*

1.	Saar, Der Steinklopper—Holt .....	.35
2.	Sudermann, Frau Sorge—Heath or Holt.....	.90
3.	Baumbach, Der Schwiegersohn—Heath or Holt.....	.40
4.	Hoffmann, Iwan der Schreckliche—Oxford Uni. Press.....	.60
5.	Freytag, Doktor Luther—Ginn.....	.45
6.	Raabe, Else von der Tanne—Oxford Uni. Press.....	.50
7.	Raabe, Die schwarze Galeere—Oxford Uni. Press.....	.60
8.	Thiergen, Am Deutschen Herde—Ginn.....	.50
9.	Riehl, Burg Neidech—any edition.....	.35
10.	Freytag, Die Journalisten—Holt.....	.35

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 \$5.00

## FOURTH YEAR

*Seventh Semester.*
*Supplementary List.*

1.	Frenssen, Joern Uhl—Heath .....	.90
2.	Keller, Die drei gerechten Kammacher—Heath.....	.35
3.	Moltke, Die Beiden Freunde—Holt.....	.35
4.	Schiller, Die Jungfrau von Orleans—A. B. C.—Holt.....	.70
5.	Lessing, Minna von Barnhelm—Ginn.....	.45
6.	Meyer, Der Schuss von der Kanzel—Ginn.....	.35



7. Keller, Dietegen—Ginn .....	.25
8. Riehl, Die vierzehn Nothelfer—A. B. C.....	.30

*Eighth Semester.*

1. Goethe, Hermann und Dorothea (best edition, Merrill).....	.60
Holt .....	.40
2. Goethe, Goetz von Berlichingen—Holt.....	.70
3. Goethe, Werthers Leiden—Heath, Oxford Uni. Press.....	.60
4. Heine, Die Harzreise—Ginn.....	.40
5. Max Mueller, Deutsche Liebe—Ginn.....	.45
6. Grillprazer, Sappo—Ginn.....	.45
7. Sudermann, Die Heimat—Heath.....	.35
8. Freytag, Soll und Haben—Heath.....	.55
9. Ludwig, Der Erbfoerster—Holt.....	.50

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\$4.40*Supplementary List.*

1. Lessing, Emilie Galotti—Holt.....	.40
2. Stifter, Brigitta—Oxford Uni. Press.....	.40
3. Spielhagen, Das Skellet im Hause—Heath.....	.45
4. Kleist, Michael Kohlhaas—Holt.....	.50
5. Kleist, Prinz Friedrich von Homburg—Ginn.....	.50
6. Raabe, Eulpenfingsten—Heath .....	.45
7. Hebbel, Agnes Bernauer—Heath .....	.50
8. Ludwig, Zwischen Himmel und Erde—Heath.....	.55

After this paper a motion was made by Professor McKenzie that Miss Olson succeed herself as a member of the Executive Committee. The motion was unanimously carried. The meeting was then adjourned to the Afternoon.

The afternoon session was called to order by Miss Blenda Olson at two o'clock.

The first thing on the Program was the discussion of the Course of Study which had been deferred from the morning session. It was suggested that the teachers volunteer to try out the first year of the Courses of Study as outlined, for one year and that they report from time to time as to their success. The following teachers volunteered to do this: Marie Wallin, Gilman, Illinois; Rowena Johnson, Georgetown, Illinois; Henry George Vorsheim, Austin High School, Chicago; Anna Lanz, Fairbury Township High School; Alice Mohr, Ridge Farm Township High School; Mildred Coburn, ElPaso High School. Miss Lydia Schmidt stated that she was willing to try out the new course on condition that a large number of the teachers present do it also; she said that it is of the utmost importance that it be generally tested.

Dr. Goebel of the University of Illinois, was the first to discuss the Course. He said on the whole, he thought the arrangement of it good. He thought it would, however, be of benefit to add a chapter devoted to word formation, a systematic treatment of prefixes and

suffixes, and suggested "The Scientific Study of the German Vocabulary" by Prehn. He stated that this increases the vocabulary immensely and gives an insight into the construction of the language. He further stated that many books contain a great deal of insipid talk scarcely illustrative of German "Kultur", and suggested that books be used early which treat of German life and contain the German spirit and German atmosphere. He said that every teacher should insist that European history be taught in the High Schools, for students generally are woefully ignorant of German Geography and History; he wishes especially to emphasize, for the library, books which deal with these subjects.

Professor Koller of the University of Illinois, in discussion said that in the list of books mentioned in the Course of Study there were two, Rosegger's "Waldheimat" and Freytag's "Sol und Haben" which tend to rouse class and religious prejudice.

He made a motion that these two books be excluded both from the list of selected texts of the Course, and from the minimum library list.

A subsequent motion by Professor McKenzie to refer the matter to the Committee was carried.

Mr. Otto Lanhanke, of Quincy, next discussed the course in its relation to the preparation of the lesson; he said that help in the preparation of a lesson promotes accuracy, saves time and guessing what and how to study for the next day. The first thirty minutes may be used in vocabulary drill and experimental work, correcting errors and making the pupil feel his responsibility for the lesson. Once per week a written lesson given and carefully corrected, and fifteen minutes of reading and conversation concerning it, is good. The rest of the time may be devoted to the development of the new lesson; new words may be written on the board and explained and visualized whenever possible. Mr. Lanhanke said he thought it advisable to teach the verb first and then the subject; in the first year he would teach only the present indicative of the verb, leaving all other forms for the first half of the second year.

Miss Walker of Oak Park spoke of a few definite things that should be taught among others in first year such as: a limited number of nouns and verbs; only the formal form of the imperative; and a few definite conjunctions to introduce dependent clauses. She was of the opinion that a reader could profitably be introduced much earlier than the beginning of the second semester, and that fewer formal poems should be used; that the framing of questions to which answers have been given is not beneficial and that the informational knowledge as outlined for the first year covers too much ground; she also objected to Composition Day as advocated in the Course.

Mr. Vorsheim of the Austin High School, Chicago, said he had obtained good results from the "Märchen und Erzählungen". He stated that he thought it advisable to teach only a few prepositions the first year and he would eliminate "an" on account of its variations; his students are taught only five prepositions which govern only the dative,—mit—nach—von—aus—zu—and only durch and für which govern the accusative; the pupils are drilled on these for months and gradually a few others are then introduced.

Miss Dunlap of the Parker High School, Chicago, said that in her opinion, instead of the words "hasty vocal drill" the report should read "constant vocal drill," and that the difficulties which occur in the lessons should be disposed of the first day instead of waiting for the next day. She felt that the informational knowledge as outlined should be cut down, and that the statement made in the Course *that casual conversation about things in the room is productive of no permanent good*, is wrong.

Dr. Oliver announced that another edition of Bulletin 12, for which there had been such demand, would be issued and that those who wished to obtain a copy should apply at once.

The next number on the Program was a paper on "Language Clubs in Connection with the Use of the Library" by Miss Mabel D. Ricketts of Urbana. Her paper follows:

#### LANGUAGE CLUBS AND THE USE OF THE LIBRARY THEREIN

Mabel D. Ricketts, Urbana

We began our library one year ago with one very poor German Dictionary, and 40 German song books, of which number the Board of Education purchased 15, and the German Club 25. For this purpose they used a part of their club dues, which were placed at 25 cents per member per year. These books are gotten out by Scherer and Dircks of Shortridge High School in Indianapolis, and can be procured from the American Book Company at 20 cents apiece. They have proved of infinite help, both in class-room and in club work. It is indeed surprising to see the enjoyment which even the beginners get out of being able to sing a few German songs. Several times thru the year when I have assigned some poem or song to be learned for the day's lesson, we have used practically the whole lesson period for singing, so that, by the end of the first year, the students know some six or seven German songs by heart, and are familiar with a number of others. This may seem like transferring a part of the regular club work to the class-room, but one gets at all the students in this way.

At one German Club meeting we added extra interest by having a number of tableaux to represent some of the songs, such as: "Haidenröslein", "Guten Abend, Gute Nacht", "Spin Mädchen, Spin", "Der Gute Kamerad" usw. We have also now in our German Library 7 or 8 good records for our Victrola and we hope to add more later.

As an aid to obtaining a little "Sprach-Gefühl" early in the course, I know of nothing better than having the class learn some of the sweeter, simpler German poems, and it is wonderful how early in the course this may be attempted. I had an interesting experience this fall which may perhaps be worth the telling. Before the end of the first week I told my first year classes



the story of "Wie die kleine Blume, Vergiszmeinnicht, ihren Namen bekommen hat," which, thru gestures and facial expression I was able to make them understand. The first of the second week I assigned them the poem to learn. What was my surprise when I asked, "Wer kann das Gedicht sagen?" to have one of our great, big, husky foot-ball players be the first eager volunteer. When, then, one of the girls stopped after class to say, "I like German because one can say such pretty things in it," I felt we had gotten a real start towards appreciation of the German language. To connect up with the German Club, I hope to have someone sing for us at our club one of these days the little song in English which is based on this story and poem. I should like to have them begin to feel as soon as possible how very many of our prettiest legends and fairy tales come from the German. This can be helped materially by adding to the library a good edition of Grimm's and Anderson's fairy tales. The third and fourth year students can easily reproduce some of the simpler ones for different club meetings.

In close connection with this work, one can use the "Guerber's Stories of German Opera". Some interesting facts about the composer could be given—in English if desired—the story of the opera told, and one or two of the songs rendered by someone from the community or school. The class or club would appreciate these more thoroughly if the words had been put on the board beforehand, and the teacher had not merely read them to the class, but had had the class read them several times singly or in concert. Then they would not only appreciate the music of the song, but would hear and understand the words as well. I remember yet the first time I ever heard "Der Erlkönig" sung after I had learned the words. It appeared to me with far greater force than ever before. Also I had the experience about three years ago of having a number of people in my class hear Schumann-Heink sing this song immediately after they had learned it in class. For several years I have had in mind a very realistic dramatization of this poem with a great deal of beautiful pantomime to represent the visions of the boy,—all of which I hope to work out some day in our German Club. But, referring to the experience mentioned above, the hearing of this one song by Schumann-Heink brought those members of my class back full of enthusiasm for learning German songs and ballads, where it had been very much of a task before. At the present time my first year classes know by heart eight little stories, one poem and one song.

In some schools, students are not admitted to the German Club until they have had at least two years of German. Since, in many of our schools only three years of German are taught, and in a number of others only two years are offered, it is necessary for the most part to bring our German Club, if we are to have one at all, down to the level of all students. I, myself, think this is very advisable, as it can be made a source of great inspiration to the younger students.

This fall we are adding to our library a number of books recommended by your committee of last year. As I have looked and studied them over, I have come to the following conclusion:

One can so easily use the German Club and the library as a supplement to the class work. Most of what I shall have to say on this part of the work is merely suggestive; and for some of these ideas I am indebted to Miss Olson and to Professor Fitz-Gerald.

We are using in beginning German the "Sprach-und Lesebuch". The story of "Der Kaufman su Sans Souci" naturally brings up the story of Frederick the Great and this palace. This opens the way for many subjects for which time cannot be given in class. The following topics might well be used for the main part of a German Club program.

1. Some important facts about the life of Frederick the Great, and what he accomplished for Germany.
2. Several anecdotes about him, some of which might be told in German by some of the older students.

3. Frederick's relations to Voltaire.
4. Frederick and his dogs.
5. Some personal habits of Frederick.
6. The story of the old mill.
7. His library.
8. The secret cabinet-table.
9. The tree of petitions.
10. The story of Gundling.

Or, suppose one has found the mention of Berlin in the lesson, "Ein Brief", one could easily spend at least two club meetings on this topic. Such topics as the following would make very interesting programs:

1. The Brandenburg Gate with a description of its architecture, and the story of the chariot on top.
2. "Unter den Linden", its trees, and statues with their military characteristics and legends.
3. The Royal Opera has so many interesting things about it that it might serve for at least two reports.
4. The Tiergarten. (Of this I hope to procure slides from the Department of Agriculture of the University for presentation at one of our club meetings.)
5. The Royal Palace.
6. The Military Atmosphere of Berlin.
7. Der Lustgarten.
8. Die Sieges Allee.
9. The Municipal Government of Berlin.
10. Typical Characteristics of the People of Berlin.

I found still many other things about Berlin mentioned in the aforesaid books fully worthy of being brought to the notice of the German Club, and with which time might profitably be spent.

To each of several other German cities an evening might be given. We enjoyed immensely an evening last year when Professor Brooks brought his slides of Nürnberg over and gave us a delightful lecture.

Then I have thought that one full evening might be well spent on interesting German superstitions and legends of superstitious character, many of which are scattered thru the books recommended last year.

Another evening could be profitably spent on peculiar German customs found in different parts of Germany, and in comparing them with some of our own customs.

Were one to make a list of men who have played an important part in German history, and whose names one is constantly running across in the reading, one would find material in the library for many a profitable German Club meeting. I am sure I need not go into this part of it. But surely a child would have a better understanding of the present Germany from some knowledge of its greatest men.

Then one must not forget the story of the development of the present German Empire. Perhaps a general survey, taking up one main period at each of several meetings, would be a good way to proceed. Since so much of this development depends upon the Prussians and their work, one would need to devote a great deal of time to this particular nation.

Then there are the poems, songs, dialogues and short plays to help fill out the more merely entertaining part of the programs. We found a great deal of enjoyment from dramatizing and presenting one or two of the little dialogues from Allen's "German Life", and one or two of the short stories from his "First German Composition". "Die Schulzes im Restaurant" was especially good. There are several good German comedies which are easily procurable, and some of these I have produced with good success when I had only two years of German. The play must be full of action and must not

depend too much on the clever turning of words for its fun. When we have given these plays, we have always invited the whole school in to hear them free of charge, as a sort of advertisement of German Department. For the benefit of those who do not understand German, we usually tell the story of the play in English before we present it. Such comedies are, "Einer musz heiraten", "Eigensinn", and "Der Knopf". You will be able to procure these from D. C. Heath, Henry Holt & Co., Jenkins or Stechert.

Besides all this more serious part of the German Club work, one must not forget the games. They should play a very important part and must be of many varieties. Again, it is necessary to have some games that even the first year people may play. Our people got a great deal of enjoyment out of a simple little game in spelling. Letters are prepared beforehand for a certain group of words. One must see, for instance, that there is a sufficient number of A's and B's for the greatest number of times this particular letter occurs in any one word. The party is divided into two sides with a captain for each, and each captain is given a complete set of letters printed on squares of cardboard or heavy paper, and large enough to be read across the room. Each captain distributes these letters among his men. Some one pronounces the words, and it is the business of each captain to get his men in a row in the order to spell the word as quickly as possible. The race creates a great deal of excitement and fun.

For the want of a real German game for one meeting, we translated "The Farmer in the Dell" into German and were able to sing it to the same tune. This gave our beginners a merry time.

Then, demanding a little more time and care, are such games as "Was habe ich in meinem Koffer?" which could be made very entertaining and profitable when played in groups of twelve or fourteen. The first player says, "Ich habe ein Buch in meinem Koffer; was haben Sie in Ihrer Koffer?" The second player answers, "Ich habe ein Buch und eine Feder in meinem Koffer," etc., each repeating all articles mentioned before. He who misses pays a forfeit which must later be redeemed by doing some little "stunt" in German prescribed by the leader. I tried this out in my first year classes before the end of the first month, minus the forfeits, and found to my astonishment that they could often carry it thru the tenth noun.

A little harder still is the game, "Land, Wasser, Luft", in which the man in the center points to a member of his circle and says, "Land", "Wasser", or "Luft", and the designated person must name some animal native to that particular element. If he fails, he becomes "it" and the former questioner takes his place in the circle.

The German Proverbs have proved a great success in second and third year German. There are 100 cards, each with a German proverb on one side and its English equivalent on the other. I was much interested in reading these German proverbs to my third year people and asking for an English equivalent. In many instances they were able to give a much better one than was on the card. Others they didn't know at all. With just this much preparation, I let them play the game for one period, from German to English. The cards are dealt out, giving as nearly as possible an even number to each. The first player reads his proverb and asks the player to his left for the English equivalent. If this player can give it he gets the card to keep, the object being to pile up as big a number of cards won in this way as possible. If the first player cannot give it, it passes on to the next player, etc. If it should go clear around the circle, and the person who asks it, gives it, he keeps the card; but if he cannot give it, he puts it back into his hand, after reading aloud the English proverb, and calls for it again later. Of course as much of the conversation as possible concerning the game should be kept in German. The pupils were very enthusiastic over it. After they had tried this once, I made a list of the proverbs, and had copies of them run off on the Neostyle and gave each one a copy which they could study over night. The next time we



reversed the order, and the person whose turn it was gave the English proverb and asked for the German. It was astonishing how many some of them had learned and what a pride they took in their knowledge and in the size of the pile of cards they could stack up by winning them with a German Proverb.

Then there is the "Deutsches Literatur-Spiel" patterned after our regular game of authors and the "Divided Proverbs" which can be gotten from W. R. Jenkins, New York, as can also the others. I have samples of each of these here if any of you would care to see them.

Miss Olson lent me three fine games which were brought from Germany: "Das Handwerker-Quartett Spiel", "Das Tierreich-Quartett Spiel", and "Neues Frag-und Antwort-Spiel". These come from the Spielwarenhaus von Richard Zeumer, Dresden, Schloss Strasse 22. The two former are played something like our old game of authors, the object being to make a complete book of four cards by calling on different players for the card wanted. I fully believe that the first year people could have played either of these games and enjoyed it; I did not, however, try it out because there were not enough sets for any one division, but the second and third year people enjoyed them immensely.

The Frag-und Antwort Spiel is a great deal of fun. There are equal numbers of cards of questions and answers, and the cards are dealt so that each player has an equal number of each. One player reads one of his questions and draws an answer from the hand of another player. It may not be the answer desired, but often is so appropriate that a great deal of fun is caused, for it must be read aloud. The object here is to complete as many questions and answers as possible. My second and third year people enjoyed this game more than anything except the proverbs. One boy remarked, "I like the proverbs best because that game really requires more skill than any of the others",—but this particular boy has learned the whole 100 proverbs, and no one gets by him.

I have attempted to touch on all sides of my own particular efforts in the German Club work. Much of it is still in the experimental period, but I hope to get it all on a more definite working basis within this next year. (Meanwhile any suggestions from any of you will be highly appreciated.)

In the discussion of this paper, Dr. John D. Fitz-Gerald spoke of a Classical Club with which he was at one time affiliated. He said that when a question was asked by a pupil, the teacher did not answer it, but, instead, gave the pupil a book in which he looked the matter up himself and reported on it later. He stated that one program per month was made from the questions which had sprung up in class. He stated that this club did not give formal programs but had various forms of entertainment—charades, Greek and Roman Statuary, and later, a lantern and lantern slides. The slides were made by the seniors.

Miss Edna Dunlap of the Parker High School, Chicago, read the following paper on "The Use of the Library in Connection with French and German".

#### THE USE OF THE LIBRARY IN CONNECTION WITH THE TEACHING OF MODERN LANGUAGES IN SECONDARY SCHOOLS

Edna C. Dunlap, Parker High School, Chicago

We all concede, surely, that one of the chief purposes in foreign language study is the gaining of a closer acquaintance with, and a better understanding of, the people whose language is being studied. How may a sympathetic under-

standing of a foreign nation be obtained? Shall we not answer that the study of the language, while the most important, is still but one of several means to our end? And if it alone is used, has the child after all this any clear conception of the important historical events, the national characteristics, the geography, the industrial life, art—in brief, has he any adequate notion of the civilization of the people? I am sure we must answer the question negatively. Are we not then, in our absorption in the chief means to our end, neglecting others which are nevertheless essential? Should we not supplement our work with as broad reading as possible in English?

It is the peculiar work of the language teacher *to bring the foreign people near to the child and make it living and real*. The language teacher has the great advantage which his work gives him in focusing the attention on one country. Further, he can correlate this outside reading with class work in a way that increases the pupils' interest in the latter.

The ingenious teacher will devise a number of solutions for his problem, among them the assignment of home-reading during the first week or two of the course while little or no preparation is needed for the lessons. At this stage the child is especially curious about the people whose language he is to study and quite responsive to any suggestion to inform himself about them. The practice of outside reading should, however, be kept up if the people are to be at all real in the child's mind. The easiest way to do this is to provide a dozen or more books in the class-room, which the pupils are at liberty to read when other work has been completed, or to take home for a few days. This plan incurs no outlay of time or effort on the part of the teacher other than that devoted to a discriminating selection of the books. I have found that pupils respond fairly well and not infrequently bring the books back with the remark that their parents have enjoyed reading them too.

The course which I have found most satisfactory requires fifteen minutes a week of class time. I do not believe that more than that meager amount should be spared from our language work. The first teacher assigns a topic, briefly outlining its scope and preparing the pupils for their work in seeking information. This work is made more definite and time is economized if the teacher dictates several leading questions to which the pupils are to find answers. Chapters or pages should be given. Before the next weekly recitation the pupils will need to have spent thirty minutes to an hour on outside reading. The second recitation period of fifteen minutes is used by the pupils in discussing the topic or in answering concisely the dictated questions. It is possible to cover a brief topic in the time if the work has been carefully planned by the teacher, and if emphasis is placed on that which is of most importance. Obviously the profit to the pupil lies rather in his reading than in the too brief class discussion, and yet even this limited group-work greatly increases the value of the home-reading: it systematizes the material, puts the emphasis where it belongs, impresses the memory more lastingly, gives the child another incentive for reading, that of class interest and the desire to report well on his work, and it keeps the class working together as a group. A child who has thus spent fifteen minutes a week of class time will at the end of two or three years have a considerably increased knowledge of the people whose language he has been studying and also, I believe, a much livelier interest in the language itself than if this time had been spent on language work.

An extensive outline of subjects to be covered need scarcely be given here. The important thing is to make a start. Each topic that is taken up suggests another connected with it. Or several weeks may be spent on one book, taking a chapter or so each time. There is an abundance of very interesting literature at hand, especially on Germany. I have found rather less suitable material on France. The reading may profitably be supplemented by a study of maps and of pictures. One interesting lesson at least may be on French cathedrals, of which it is easy to get good pictures.

The results of introducing this supplementary work in English are very

encouraging. The teacher notices a change in his own attitude toward his work. He is alert for new material in books and periodicals. He conceives of his work in a broader and more vital way. Even one who has had the privilege of studying abroad and is thoroughly acquainted with the foreign people, will find that this constant searching for new material about the country has a freshening effect upon a mind that has long dwelt on the narrow routine of elementary language teaching. Much more must this be the case with a teacher who has more limited opportunities for study.

The pupil who has read and discussed a number of books and studied maps, pictures, etc. of the country whose language he is laboriously struggling to master has a background for his work; he sees a reason for the existence of languages other than his own; he realizes that the foreign tongue is not an artificial thing confined to text-books and the class room and his respect for it increases accordingly. An interest may thus be initiated which will lead to extensive reading in the foreign languages in later years. Thus, too, young America learns, possibly for the first time, that his own great and wonderful country is after all not absolutely the only great and wonderful country in the world, that on the contrary we have many very important lessons to learn from the older European civilizations. He *may* see what some of these lessons are and later make use of them: he may also lose some of his American bravado and gain greatly in interest in, and respect for, the foreigners with whom he comes in contact.

Incidentally, it is very gratifying to a teacher of foreign language to be able to speak with his pupils in their own tongue of broader and bigger things than the daily lessons.

In view of these gains to teacher and pupil, I believe that we should introduce, if we have not already done so, some plan of broadening our knowledge of the country whose language is being studied through as extensive reading in English as time will permit. The results will repay the additional effort and the loss of time from other work.

Miss Grace Birch of the Springfield High School and Mr. Harry Atkinson and Miss Elsie Sawyer of the Joliet High School gave reports on supervised study.

#### SUPERVISED STUDY Harry Atkinson, Joliet

A double-period class, with study supervision, as used in the modern language department at Joliet, means simply two consecutive periods at the disposal of teacher and pupils to be used in any way the former may see fit. It does not necessarily mean that the first period is to be used for recitation and the second for study—though that is the usual procedure. Any part or all of the time may be used for recitation and as much as desired for study.

In the German department the system is in use in the first three semesters—the method of procedure varying somewhat in the three semesters. The Grammar we use is Spanhoofd's "Elementarbuch" and the method emphasizes the oral work—German being used as much as possible in the class room.

When the double-period was first introduced, we had in mind one period of recitation and one of study. It soon became evident, however, that the time could often (not always) be used to much better advantage, especially in the beginning classes, by following the development of new material in the first period with extended application in the second. The momentum gained in the first period enables the class to accomplish a great deal in the second, when interest and enthusiasm have created an atmosphere in which impressions become more easily fixed. This atmosphere is particularly favorable for teaching by the direct method where so much emphasis is put on the oral part of the recitation. It demands, too, a more resourceful teacher than a single-period class, as there is a group of pupils to be held eighty minutes instead of forty,



during which time their interest must not flag. The activities of the class must be varied not only to enable the teacher to maintain his own enthusiasm, but for the pupils also to respond to it. Special conditions, too, must be taken into account. If, for instance, a class consists of a group of pupils whose German hour has been preceded by two other double-period classes and whose lunch period does not come until the seventh period—these pupils will be too tired to give sustained attention to eighty minutes of oral recitation. In this case more written work must be done than would be necessary with a group of pupils reciting the first two periods in the morning.

A criticism of importance to be answered here is: does the pupil not become too tired at the end of the double-period? The same question might be asked with regard to the teacher, as he undoubtedly uses much more energy in the recitation than any of his pupils. It is easy of course to overdo the advantages of the system—it is evident that the recitation must be planned with great care. I do not wish to give the impression that every day consists of all-recitation and no study. Some days do—others are equally or unequally divided between recitation and preparation for the next day. Some parts of the work are best covered by the former method, others by the latter—the recitation being always a preparation for the subsequent study.

Suppose, for instance, the class is studying the geography of Germany with the aid of a large German edition wall-map of central Europe. To begin with, the pupils generally have a slight knowledge of European geography—they at least know the English names of some of the countries and their capitals—enough to make them want to tell you what they do know and find out what they don't know. During the first period the teacher brings out the main geographical facts in connection with Germany—its location, by what countries it is bounded, the general topography of the country, principal rivers, mountains, states, cities, etc. The pupils can assist in bringing out many of these features, the teacher being quick to supply or anticipate the German names and pronunciation. The object during the first period has been to give the pupil the material that he is going to need in his second or study period, which is to consist of a further study of the map and the fixing of the facts touched on during the first period. To do this he is furnished with a set of twenty questions to be answered in German. To answer them he must make use of what he has learned during the recitation period and in addition he must freely consult the map and be able to locate the town, river or mountain in question. He is answering such questions as these: 1. In welchem Teil Europas liegt Deutschland? 2. An welche Länder grenzt Deutschland im Westen? 3. Wo befindet sich die Quelle des Rheins? 4. Welcher Teil Deutschlands ist gebirgig? Etc. On the following day the pupils are able to take a much more active part in the recitation and are able to locate and tell about the main geographical features discussed on the previous day. If the class had been a single period one, the pupil would probably have had to prepare his lesson without access to the German map—or, if he had been able to use the map, he might have spent much time in finding places, that could have been quickly located after a suggestion or a question from the teacher. The double-period has meant, then, a better and a more rapid preparation.

The above is a sample of a day's program for a class in the second semester's work. During the first period, new material was developed with the aim of making it the basis for independent study during the next period. This study resulted in the acquisition of facts and in the ability to express them in simple German.

We might consider another recitation which lends itself rather to the continuous-recitation type of treatment. A class in the third semester is studying the human body, using as a background a reading lesson under the heading: "Der menschliche Körper". The first period is spent in reading, developing, discussing and questioning and at the end of the period the pupils are fairly familiar with the materials in the lesson. During the second period they are

sent to the board to make a list of the new words and idioms learned, giving German equivalents of the latter. The pupils then take their seats and one or two of the lists are corrected, the plurals of the nouns written and idioms applied again, after which the pupils return to the board to correct their work. They now exchange places at the board, so that each may have his work inspected by someone else, to be sure all errors have been corrected. Now that the ear and then the eye have become familiar with the new vocabulary, questions are dictated similar to the ones used orally—the answers being written on the blackboard and later corrected as was the vocabulary before, except that the teacher reads the correct answers while the pupil is inspecting the work of his neighbor. The errors are checked and again corrected by the pupil and inspected by the teacher. Thus incorrect forms and answers are corrected before the wrong form has had time to leave an impression. Again, if the recitation had been a single-period one, the answers to the questions would have been prepared outside of class and the errors would have stood many hours before being corrected. On the second day, then, the pupil under the double-period system will come to class with his errors corrected in advance and will be able to review the work of the previous day much more rapidly than he would under a single-period system.

In addition, the double period has many other advantages. There is no possibility of a pupil coming to class without having prepared his lesson. He is studying much more intensively under the eye of his teacher than he would if he were seated in a large study-hall. His study period has the same atmosphere as his recitation period. But most convincing of all is a comparison of the results under the two systems. I'd like to quote from a letter that I received from a teacher who taught four years at Joliet using the two-period system and who is now teaching in another high school under the single-period plan. "I am more convinced than ever of the great value of supervised study. After teaching by that method and going back to the one-period class, I am almost frantic trying to do the work as it should be done. The papers which are prepared outside are very unsatisfactory and it seems to take much longer to get mistakes and false ideas out of the pupils' heads. Those who have had German before are by no means as well prepared as ours were. I have an A I class (using the same book we used) and I wish you could see their work—oh, I wish you *could* see it. Such spelling and inaccuracy. No B I class *could* be guilty of their errors. They are so poorly prepared that I pity them."

We have used both systems at Joliet and would not for a great deal go back to the single-period.

#### SUPERVISED STUDY Elsie L. Sawyer, Joliet

Miss Olson has asked me to supplement Mr. Atkinson's paper with a few remarks, because she knows I am so enthusiastic over the double-period scheme as used in Joliet.

We have had this scheme in operation almost five years and I have seen it develop from the fixed plan of a thirty-seven-minute recitation followed by a thirty-seven-minute study-period into our present plan.

The first year's trial led us to the realization that the second period held possibilities for better results in acquiring the foreign language than we were then getting. The attainment of these results lay in emphasizing the oral work by *increasing* the amount of *oral instruction*. This meant the use of some of the thirty-seven minutes of the second period in *active, cooperative* study as opposed to passive, individual study.

Let me explain what I mean by active, cooperative study through a specific case. Those of you who are acquainted with Spanhoofd's "Elementarbuch" will recall the nature of the first two or three exercises in each lesson. For those who do not know this text let me explain that these exercises come

after the development of the subject-matter, paradigms, anecdotes or stories, grammar, and vocabulary, and serve the twofold function of drill and test.

For my purpose here I have chosen from Lesson VIII, an exercise which has eleven short sentences to be conjugated in the present indicative and imperative. Formerly, when the entire second period was reserved for individual study, *six* sentences were assigned to be written and fifteen minutes were allowed. The remaining assignment was of another kind,—reading, answering German questions, or memorizing.

In our active, cooperative study we now in fifteen minutes give all eleven sentences *orally* and, if desired, an additional one may be written. Some of these sentences are given orally by *individuals* and repeated in concert. If the teacher resorts to different devices such drill will prove both *aurally* and *orally* effective.

Perhaps the criticism that pupils are held under too long a strain through such a use of the second period will be advanced. I shall read you a couple of programs which are typical of class work for beginning pupils and which I think will forestall this criticism.

One program uses:

- (1) Ten minutes for review of the present tense.
- (2) Twenty-seven minutes for reading and oral questioning.
- (3) A three-minute intermission.
- (4) About five minutes more for questioning.
- (5) Thirty minutes in the writing of answers to questions based on the reading.

Another consisted of:

- (1) Thirty minutes' development and questions.
- (2) Seven minutes' board work.
- (3) A three-minute intermission.
- (4) Five minutes' correction of board work, with pupils remaining at the board.
- (5) Fifteen minutes' reading.
- (6) Seventeen minutes study.

These two programs give you an idea how we vary the class activities during the two periods. Furthermore, they show that time was left for such preparation as the next day's recitation demanded.

The opinion advanced by some of our visitors that "Supervised Study" occupies an insignificant place in our double-period classes leads always to a discussion of the terms "study" and "recitation". With us these are often but relative terms, as used in connection with the teaching of modern languages. Some of our recitative activities constitute more *intensive study* than many of the so-called study activities.

Let me say, in conclusion, that we are getting results such as were never possible under the one-period scheme. I hope never to have to go back to that unsatisfactory condition of teaching. Indeed, my acceptance of an offer of another position, no matter how tempting, would depend on the answer to the question:—

"Is there a chance for the double-period scheme in your school?"

SUPERVISED STUDY IN THE GERMAN DEPARTMENT OF THE SPRINGFIELD  
HIGH SCHOOL  
Miss Grace Birch

One year ago there was introduced into the Springfield High School by the principal, Mr. I. M. Allen, a system of supervised study whereby the school-day consists of five periods of eighty-five minutes each.

Of these five classes, by the use of the float system, four are taught each day. Each period is divided into a forty-five minute recitation period and a



forty-minute study hour. No teacher is permitted to extend the recitation into the study hour. The lengthened or divided period plan was chosen as offering the best opportunity for supervised study which has as yet been discovered.

In the assembly of the entire school which is held once a week the principal gave a series of talks upon effective study. These were summed up under the main divisions:

- (1) The machinery for effective study.
- (2) The will to study.
- (3) The technique of effective study.

In order to make specific application of these principles Mr. Allen wrote study-helpers for each department. These the pupils pasted in their text-books.

In the department of modern language, these study-helpers, which were gladly accepted by the department, are as follows:

#### I. Why study German or French?

The study of modern languages

- (1) is essential to keep abreast with the times in every art, science, or profession;
- (2) is useful in trade and travel and affords new fields of literary inspiration;
- (3) is useful as a discipline because of the serious purpose necessary to learn to speak and write a foreign language while resident in America.

#### II. How to study German or French.

- (1) Read aloud, striving to get the thought from the foreign idiom direct.
- (2) Apply every day to pictures and objects about you the new words acquired.
- (3) Use the new language continually, use it as you walk to and from school, as you sit at the table, as you talk with classmates, as you wake from sleep.
- (4) Study carefully the rules for memory drill given with the study of Latin and apply them here.

At the beginning of the second year's trial of the plan of supervised study in the department of modern language, pupils were asked to state their opinions as to the advantages and disadvantages of this. The papers were not signed. Chief among the reasons in favor of this were: (1) "It gives us a systematic study-program and forms the study habit." (2) "The pupil has a quiet place to study. He is saved the innumerable interruptions he must have at home. No one is calling him to the telephone or talking to him on some subject foreign to the one he is studying. Everyone else is studying and so the negligent student, who is apt not to study at all, just studies too." (3) "It teaches us how to work out things for ourselves, so that we will know how when we have to do it alone."

Boys who are earning their way through school prefer this plan as it gives them time to study and get their work done in school. Others say they now have more time for outside activities.

Chief among the disadvantages was the length of the school-day, especially in the case of out-of-town pupils; but this difficulty will be removed by the lunch-room in the new building which will make an earlier afternoon dismissal possible.

The usual decision was: "On the whole, I like it."

Examining these statements of pupils more closely, we see in the first, "It forms the study-habit", the importance to the boy or girl whose habits are being formed of having a definite time and place to study. They prefer this and often say so.

In a home of which I heard there was, in the evening, what was known as

the "silence table" where the children had every opportunity for quiet study; but we all know in how few homes such favorable conditions are to be found. In the school room where books, pictures, bulletin-boards illustrating the lesson, are at hand there is encouragement to study and pupils with us have shown their willingness to accomplish all that they can at school and have the time outside free for other activities.

Considering this from the teacher's standpoint, we find in our study hour a better opportunity to know the needs of the individual pupil and to show him how to do the best work of which he is capable. For the time, place, and mental attitude are not the only conditions necessary in order to strive to reach the end in view.

A right use of these by both teacher and pupil can alone make this possible. And while much is being said and written concerning the benefits to the pupil of supervised study, it is also, to my mind, of the greatest value to the teacher. How to lead up to the best results in the recitation by the wisest use of the study hour may become a fascinating study and will repay the most earnest effort. In the slow and careful work necessary with the boy who has never found English grammar easy, as well as in planning for the few bright ones who have the time for some extra work, the teacher finds each day more and more which may be accomplished by this method.

With the exception of the pupils received from our Junior High Schools where instruction in German is given in the seventh and eighth grades, the study of a foreign language is an entirely new experience in our Freshman German classes. When we remember the importance of beginning work and of the right understanding of the new sounds and symbols, one may appreciate the value to us of being able to learn very definitely of hindrances and obstacles which the beginning pupils may have to encounter.

The method of study is more easily corrected for the teacher can learn far better under the supervised study plan what can be accomplished by a pupil in a forty minute study hour than when the lesson is prepared at some other time and place. She can find out much more easily why he disregards the difference between transitive and intransitive verbs, why he does not use the dative case correctly and, in the higher classes, why he does not have the right order of words in the dependent clause or forgets to use the subjunctive mode. She may ascertain very easily if he is stressing in his preparation the main points of the new lesson or the review upon which foundation the new lesson rests, or if any point in the assignment is not perfectly clear. Also she may see that he is not spending undue time and effort upon some slight stumbling block.

Our object is thus to leave pupils as far as possible to their own resources. The teacher during the study hour corrects written work at her own desk or passes around the room making suggestions or asking and answering the questions of individual pupils. Only when she finds the same mistake made by a number of pupils does she then interrupt the class for a moment or put some question or outline on the board. Usually the room is kept quiet during the study hour, and much routine work may be completed at this time.

We believe this silence and quiet, instead of the distraction of rushing from one subject to another, to be of great benefit to both class and teacher, giving each an opportunity to begin instantly where the thread has just been broken off, to study and strengthen and develop the work which is so filled with the best interests of each one of us. It cannot fail to elevate the character of the work accomplished. We recognize and strive to reach the individual needs of the pupil, and to lead him to learn the all-important power of real concentration.

After a short discussion Dr. Fitz-Gerald moved that it be the sense of the section to recommend that the principals of the various schools in the state try supervised study in at least one class. The motion was carried.

Professor Koller rose to express his appreciation of Miss Schmidt's excellent paper—a sentiment which was echoed by the entire section.

In continuing the discussion on the Course of Study, Professor Brooks of the University of Illinois, said students take pleasure in reading books which are edited in Germany and suggested that more teachers make use of that class of books. This was discussed by Mr. Vorsheim and Mr. Zimmerman.

After the conclusion of the discussion the section was adjourned.

### MUSIC SECTION

The section convened in Room 126, University Hall, with Director J. Lawrence Erb in the chair, in the place of Mrs. Constance Barlow-Smith.

### Morning Session.

The morning session was devoted entirely to Round-Table discussions on the following topics:

- (a) Making More of Sight Singing as Foundation Work
- (b) The High School Glee Club
- (c) The High School Orchestra
- (d) The High School as the Center of Community Music Activities.

It was the consensus of opinion that the direct educational value of music in the schools was too often sacrificed for its exhibitional phases. On that account the drill necessary to make good readers of the pupils was made to take a secondary place, while the emphasis was laid upon the organizations which were in the public eye. In order to make the reading more efficient, it was urged that more attention be paid to individual work. It developed that conditions of poor sight reading were almost universal throughout the west and middle-west with occasional schools which were conspicuous for their excellence. The difficulty resulted largely from discontinuing the reading exercises after entering the High School. Either the work should be continued through the high school for all students, or else each student should be required to pass an individual test before being excused from such work. Necessarily more time should be given to music courses, and the supervisor needs a better type of cooperation on the part of the grade teachers. Reading drill should be carried on entirely without piano accompaniment. The educational value of music must be brought out and the ability to read at sight is one of the prime requisites. Without it there can be little constructive work musically. The best results are to be had where the teacher and the examiner are



two different persons. In that way the quality of the teaching must pass the test quite as much as the learning. For this reason the supervisor should be enabled to concentrate much of his attention upon courses in teacher training for the grade teachers so that he may be in fact as in name a supervisor. Otherwise his energies must be too much scattered to achieve the best results.

In the discussion of the High School Glee Club, the point was made that as yet the glee club is largely an entertainment factor and that its impression depends quite as largely upon the personnel as upon the quality of the work. It was generally conceded that the boys' glee club met with more favor than a girl's glee club, though in many cases the latter did more finished work. An important point was made with regard to the differentiation between the glee club and the school chorus. The former should be comparatively a small organization and should consist only of *picked* voices, but the latter should contain everyone who can sing, wants to sing or ought to sing. In the matter of organization and development of the glee clubs, it was urged that in many cases it pays better not to make the work too exacting at first, but to develop an interest and enthusiasm for the organization and then gradually to improve the artistic standard. The sentiment in the main was *against* inclusion of the glee club practice period in the regular school hours. Since music in the schools must be made a three-fold matter,—namely, the educational, the artistic, and the social or entertainment,—the supervisor should carefully distinguish between the various phases of the work and should not jeopardize the more important for the sake of the less important. The real instructional work should, of course, come in the regular practice, but the organizations should meet after or before school. For the same reason credit should be asked only for the more important subjects, not for all, since it is impossible to include all in the accrediting scheme. A fundamental difference in the administration of the two kinds of courses lies in the fact that accrediting courses are open to all who care to take them, while the glee clubs are restricted in membership. In the Township High Schools, it is often necessary, however, to conduct rehearsals during school hours because the boys especially cannot remain long enough after the school is over.

In the High School Orchestra Section, emphasis was placed upon the necessity for starting usually with popular music and gradually improving the quality. The point was also made that in many cases the orchestras continued popular and retained their full strength even *although* credit was denied. Here also it was urged that programs be made for their educational value rather than for show or for adver-

tising purposes. There is too much of a tendency to talk about music rather than to perform it creditably. The orchestra should be as democratic an organization as possible, but each member of the organization should be urged so far as able to improve in ability by means of private lessons. The stringed instruments, especially always needs attention and the parts for the string players ought to be marked, bowed and fingered in advance; then the conductor can insist that the players follow what is on the printed page. Works that are too ambitious should not be attempted,—for public performances at least. Learn a few simple but attractive compositions and play them well.

A certain amount of routine drill, such as scale playing and technical exercises, is of great value. Attention must be paid to the proper height of the chairs so that bad habits may be avoided.

The school house should be the natural center of community activities. Just as often as school organizations can creditably appear in public they should do so. Education which is uncoupled with service is not much worth while. The teachers should be community leaders. Returns from the expenditure for music education do not always compare favorably with those in other departments, largely because the energy of the music teacher is too widely scattered, and he is not enabled to contribute his share toward the larger work of community uplift. It is the supervisor's job to improve the musical life of the entire community, and to do that he must work over-time sometimes. The schools should be so equipped that the evenings as well as the days may be utilized for educational purposes, the evenings for the adults and the wage earners. The teachers must cooperate, must be willing to give and take and even to accept a subordinate place if necessary to further the end of musical education. Community sings are the best form of community music activity, and what is more natural than that the school supervisor of music should conduct them? In connection with community music work the school glee clubs and orchestras could do much by appearing at frequent intervals in the various assembly rooms, giving in that way a certain amount of musical education to every child in the schools.

#### Afternoon Session.

The afternoon session was called to order at 2:00 o'clock and Mrs. McNair of Mattoon and Director Erb of the University of Illinois were elected to the committee and Director Erb was elected Chairman for the year 1916-1917 and Mrs. McNair was re-elected Secretary. After a short discussion, outlining plans for the succeeding year and arranging for material for library lists, the regular program of papers proceeded.

Miss Clara T. Dailey of Peoria, on account of illness was unable to read the paper assigned to her, but in her stead Miss Ruth Clapp of Urbana read the following paper on Music Libraries for High School Libraries:

Music Libraries in the High School.

Ruth Clapp, Urbana.

The topic assigned was "Musical Libraries in High Schools." I have not confined myself strictly to this subject, as you will no doubt discover.

In fact, I have stretched it to its limits.

The question of High School Libraries is a much discussed one at present. Every teacher, principal and superintendent realizes the educational importance of placing a library of carefully chosen books within the reach of every boy and girl. Direct teaching, or the direct contact between teacher and pupil is not the only important factor in our modern pedagogy. Pupils must be inspired to seek learning for themselves. The value of self education must not be underestimated. Aside from the teacher, the pupils must turn to the libraries.

In the formation of a High School library the co-operation of each teacher is needed. Each subject should be represented by carefully chosen reference books, selected by the teacher of that subject. Music and music study has been given an honorable place in the curriculum. The very fact that music forms a part of the high school program is reason enough for discovering the best means of fitting it into the course of study. Any course in High School music, no matter how elementary, needs a broader scope than one text-book. The work in music should be held to a high standard.

Unfortunately our public libraries have not developed along the lines of musical art in the same proportion as they have cultivated the fields of nearly every other form of art. This is a direct result of the demands of the people. However, in larger cities the libraries are now equipped with a great store of music literature in reach of everyone. In the smaller cities the libraries of the High School must supply the demands.

Speaking from experience, lack of a musical library is a decided handicap. The past semester I have been trying to interest classes in harmony, musical history and music appreciation with two reference books, and the aid of a few students who have access to the University library. This condition does not arise from the fact that the school board is not interested, but it takes time and patience to build even a small library properly. However, my list of books is ready, in fact has been submitted, and we hope to lay the foundation for a fine musical library.

In the task of collecting a library, the literature of music presents only one difficulty, that of at first restricting the selection to the most necessary books. Only a few well chosen, say a half dozen, are necessary for a small working library,—a music history, a dictionary of musicians, a dictionary of musical terms, a general book on harmony, or essentials of music, a book of biographies, and one on music appreciation, branching out as soon and as much as possible. The first addition might be Grove's Musical Dictionary which furnishes a central source of information for any library which can afford it.

Music.

Standard History of Music, by Jas. Frances Cooke.

First Studies in Musical Biography, by Thomas Tapper.

Famous American Composers, by Rupert Hughes.

Elson's or Baltzell's Dictionaries.

Encyclopedia of Music and Musicians, by Stokes.

A Popular History of Music, by Mathews.

Outlines of Musical History, by Hamilton.

History of Music, by Waldo Seldon Pratt.

The Masters and Their Music, by Matthews.



Great Composers and Their Work, by Louis C. Elson.  
 Modern Composers of Europe, by Arthur Elson.  
 Among the Great Masters of Music, by Rowland.  
 Standard Musical Biographies, by Upton.  
 Life Stories of Great Musicians, by Streatfield.  
 Personal Recollections of Wagner, by Neumann.  
 A Biographical Study of MacDowell, by Lawrence Gilman.  
 Schumann, by von Wasielewski.  
 Liszt, by De Beaufort.  
 Grieg and His Music, by Finck.  
 Chopin, by Liszt.  
 Beethoven, by D'Indy.  
 Beethoven and His Forerunners, by Mason.  
 Beethoven, by Schindler.  
 Brahms, by Erb.  
 Stories of the Wagner Operas, by Guerber.  
 Stories of the Famous Operas, by Guerber.  
 The Standard Oratorios, by Upton.  
 The Standard Operas, by Upton.  
 Book of the Operas, by Esther Singleton.  
 The Symphony since Beethoven, by Weingartner.  
 Symphony Writers Since Beethoven, by Weingartner.  
 Music Notation and Terminology, by Mr. Gehrken, of Oberlin.  
 Musical Essentials, by Maryott.  
 How to Listen to Music, by Krehbeil.  
 How Music Developed, by Henderson.  
 What is good Music, Henderson.  
 How to Appreciate Music, by Kobbe.  
 Guide to Music, by Daniel G. Mason.  
 Education of a Music Lover, by Edward Dickinson.  
 How to listen to an Orchestra, by Annie W. Patterson.  
 Orchestral Instruments, by Mason.

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The selection of books should contain the following classes (with a meager list of material in each):—

A. Musical History.

Baltzell's (excellent—concentrated)

Fillmore's (very good)

Matthews' (good but old)

Standard History of Music, by Cooke (easy reading for High School)

- Hamilton's Outlines (heavy—requires much outside reading)
- B. Dictionary of Musical Terms.  
Baker's
- C. Dictionary of Musicians.  
Baker's (deals more with foreign composers)  
Baltzell's (deals more with American composers)
- D. Stories of Opera—Law.  
Standard Operas and Oratorios, Upton
- E. General Theory.  
Elements of Harmony, Erb  
Essentials of Musical Definitions, McConnell  
Musicology, Logan  
Catechising Harmony, Schwartz.
- F. Biographies.  
From Greig to Brahms, Mason  
Beethoven and his forerunners, Mason  
Brahms, Erb  
Standard Musical Biographies, Upton  
Who's who in Music, Pub. by Current Literature Pub. Co.  
The Blue Book, Pub. by Blue Book Pub. Co., of New York, (gives  
in concise form the activities of leading American Musicians)  
The Autobiography of Wagner  
Year Book for Music Teachers, by Presser, (price 10c. A daily  
help contains unusual and valuable data)  
In the field of biography, there is absolutely no limit which one  
might set.
- G. Church Music, should have a place.  
Hymns and Church Music, Erb.
- H. Folk Song.  
It would be unwise to spend much money for literature of this  
class, as the movement is too shifting to last.
- I. Orchestra.  
Orchestral Instruments, Mason
- J. Music Appreciation.  
What we hear in Music, Faulkner  
Listening Lessons, by Mrs. Fryberger  
I had the pleasure of being in Mrs. Fryberger's classes and I  
heartily endorse her book. The material is so carefully classi-  
fied, the aims of each record plainly shown, and the choice of  
records themselves so valuable, that any teacher could establish  
an appreciation course with this little book.

In making a selection of records, three points must be kept in mind. (1) that the double-disc records at 65 and 75 cents furnish an ample variety without going into the higher priced records, (2) that the selection should always better the musical standards, (3) that there are special lines of collections which are interesting to follow, for instance records illustrating the solo instruments of orchestra or symphony orchestra music of which there is a fair representation in \$1.25 and \$1.50 double-discs. Special collections are more advantageous than hap-hazard buying.

In our own school we add to our collection gradually buying a few at a time, as the course is mapped out. A few years of careful buying will see a large growth in the library. The Victor Catalogue is complete and at anyone's disposal for the asking. It is surprising the many classes of records available at a modest price.

The last class would be the music literature for the chorus. In the selection of choruses every teacher must be governed by the abilities and needs of her classes. However, it is to be hoped good taste be always in evidence, even tho

in arousing interest one must sometimes resort to a different class than ordinarily used. For instance, if I accepted a position in a High School in which music interest had waned and died, or if musical ability was lacking, I should not hesitate to teach by rote if necessary a light popular tune.

There is no need to give a list of suitable music, as any music publishing house will gladly send music on approval for your selection. Lyon & Healy, Clayton Summy, Gamble Hingel Music Co., all of Chicago, handle practically everything in the music line. Then in the east is G. Schirmer, New York; Oliver Ditson Co., Boston; Carl Fischer, New York, publisher of orchestra music; J. Fisher & Bros., New York, publishers of operettas; The Coda Edition of Ginn & Co., (Chicago); The Beacon Collection of Silver Burdett, (Chicago); The Leaflets, published by Willis Pub. Co., of Cincinnati, and others furnish much material.

I think the backbone of H. S. Chorus music should be a good song collection, such as the Beacon Song Collection, (Silver Burdett) Standard Song Classics, (Ginn & Co.) Standard Songs and Choruses (MacConnell) American Book Co.) Standard Songs and Choruses, (Ginn & Co.)

One might go on indefinitely, the field is so great, but for the average High School, a few well chosen books along the several lines mentioned should be the basis of a good working library. After the pioneer work is done the growth should be rapid.

After a short general discussion, Miss Mary J. Maguire of Alton read the following paper on "The Mechanical Players and Their Literature":

#### Mechanical Players and Their Literature.

Miss Mary Maguire, Alton.

Music has been described as the most spiritual of all the arts, and in support of this statement this argument is advanced. An artistic piece of music is performed, by it an impression is made on the delicate mechanism of the ear, a fleeting mental picture is created, which dims and disappears, and cannot be reconstructed.

In the realm of painting, one has the actual canvas of the artist, can review it as many times as the opportunity presents, thereby reconstructing the color and entire content of the picture. In the sphere of sculpture, one has the actual production of the master and can review it, thereby reconstructing the strength and grace of line, form, and grouping for one's mental image, and feel again and again the thrill of pleasure from the one specific production.

From an artistic production of music there is left nothing more tangible than a memory. The one specific artistic production, once sounded, is gone, vaguely remembered, one cannot review it, perhaps one should say cannot re-sound it. That exquisite tone is written only in a stirring of the air, which has an inexorable habit of resuming its previous state.

The painter or sculptor needs not recreate his masterpiece for each art exhibition. The one can work to produce perfection in exquisite color, the other can mould and chisel to produce perfection in grace of line. The vocalist or instrumentalist must attempt to recreate his master tones at each performance and even *he* cannot say which is the one perfect production, and *would* he say it, could not prove it to a million memories.

One can imagine the indefiniteness of art should each artist be compelled to re-create his masterpiece, but beyond imagination would be the havoc to our artistic ideals and senses if, each time we wished to see a Corot, a Rubens, or a Rembrandt, one should be compelled to produce it with brush and oil, or if each time one would view a La'ocoon one must painstakingly chisel it out. Lacking the opportunity frequently to view a masterpiece, science and mechanical genius have supplied us with colored prints of the master paintings and moulded models of perfect statuary.



The mechanical players provide, in the musical line, the same kind of aid that prints and moulded copies of statues provide in the other arts. We must grant that these aids are not equivalent, for the statuettes are copies of existent statues, while the records and rolls are a modern conception and reconstruction of what, in the judgment of the record-artist, the music of the ancients consisted.

One would fail to understand the man who, unable to produce a master painting, lacking the opportunity to see masterpieces, turned from prints as inadequate to teach or entertain him, or who unable to travel extensively, turned from photographs of both wonderful and ordinary things of the world, in a similar frame of mind. Equally must we fail to understand the man who, unable to produce vocally or instrumentally the works of master composers, or the tone and technique of their artist interpreters, remains untaught and unentertained by an artistic mechanical reproduction of such tone, technique, and composition.

We must know what to expect from a mechanical player, phonographic or pianistic, and realize that it will not give us the perfection of tone of the artist, instrumentally or vocally, any more than the colored print gives us the perfection of color of the master, or than a picture of a dancer gives us the poetry of motion of the dance itself, or than a portrait of a person gives us the living personality of the individuality.

Let us then use the material which modern science has provided for our field of work as freely as a teacher of the History of pictorial art uses prints and lantern slides to illustrate his work.

I do not use a player piano or phonograph in our High Schools but I have outlined a system of work for our grades that could be used with good effect in an appreciation course in the High School. You see, I have sat and listened so very often to lecturers who told us in beautiful language just what should be our aims and results in teaching, and I have so very often wished they would drop just one practical hint for a starting point, from which to work. Judging others by the person I know best, I presume to tell you of my plan.

We have in our schools ten Victrolas, five owned by individual grade schools, and five belonging to the grade schools at large, these latter five with a library of seventy records purchased with money raised by means of a cantata by children in the grades under the direction of a former supervisor.

These seventy records, I have divided into ten sets namely:

- (1) Bands, Eight records, Nine selections.
- (2) Stringed Instruments, Nine records, Ten selections.
- (3) Wood Winds, Four records, Four selections, Six childrens.
- (4) Brasses and Percussions, Five Records, Seven selections, Seven childrens.
- (5) Orchestra, Five records, Four selections.
- (6) Solo Voices, Thirteen records.
- (7) Vocal Combination, Seven records.
- (8) Chorus, Five records, Ten selections, Seven childrens.
- (9) Oratorio, Eight records.
- (10) Opera, Fourteen records.

These sets are placed in wooden boxes, of a size to accomodate the largest record. One end is hinged. A double strap handle fastens and serves as a carrier.

They are numbered and are routed around the line of schools, so they follow in order as named. At the end of each school month, a different set is sent to each school and the one already there is delivered to another school.

In each box of records there are some cardboard on which are mounted pictures of the artists and composer, or director, a little printed biographical sketch of each, the story connected with its composition or performance, of a musical criticism, perhaps a copy of the theme. These were cut from the catalogs of the Victor company or from magazine advertisements or articles.

As each set reaches a school, teachers are expected to tell the pupils at least what is on the cards about each number as performed.

Under Bands we have nine records. Here attention is paid to instruments used in band, pictures of bands accompany the records, leaders of illustrious bands are named and discussed. Pryor's Band is represented by:

Schubert's "Unfinished Symphony"—  
Tschakowsky's "Festival Overture"—  
Tschakowsky's "Slave March" Op 31.  
Mendelssohn's "Wedding March" and  
Lizst's "Hungarian Rhapsody Parts I and II" Mexican Police Band by:  
Rossini's "Semiramide" (Overture) and Sousa's by:  
Von Suppe's "Poet and Peasant", Overture and  
Wagner's "Tannhauser March"

Under Stringed Instruments, besides "Instruments of the Orchestra (stringed section) Maud Powell is represented by:

Raff's "Cavatina"  
Handel's "Largo" and Zimbalist by  
Mendelssohn's "Finale from E. minor Concerto;"  
Kreisler, by:  
Dvorak's "Humoresque",  
Elman, by:  
Schumann's "Traumerei" and  
Monsigny's "Regaudon" and  
Victor Sorlin (cello) by  
Mendelssohn's Spring Song and Rubenstein's "Melody in F."

One could supplement this with some string quartets. Kreisler plays his "Rondino" built on Beethoven's theme, with string quartet accompaniment. Also if carrying out this idea with older pupils one could use the selection from Monteverdi's "Orfeo", as he is reputed to have been the first composer to have scored typical orchestra parts for violins.

There is such a wealth of records of stringed instruments from which to choose, one knows hardly where to stop or start. The recording of stringed instruments is more nearly perfect than any other one line of records.

The history of stringed instruments, and their gradual growth to the perfect violin is exceptionally interesting. One explores mythland, visits far away lands of the east with the Crusaders, carries back to modern lands their musical instruments, and traces their gradual growth to the master makers Cremona Guarmerins and Stradivarius. Having experienced this, who would not listen with interest to just a phonograph record of an artist playing upon such an instrument.

Under Wood Winds, besides instruments of the orchestra, we have that delightful flute solo Briccialdi's "Wind Amongst the Trees", by Lemmoné and two beautiful selections by The Neopolitan Trio (violin, flute, harp). The flute and harp register almost as well as the violin, tho one's choice is more limited, as the number of selections is not so great.

Under Brasses and Percussions we have besides Instruments of the orchestra, Rinaldi's cornet in Brahms "Cradle Song",

Pryor's trombone in Rossini's "Cujus Animam",  
Lewins Xylophone in "Medley of American Tunes",  
Westminster Chimes in Old Time songs and a Waltz with Band and Bells.

Rather inadequate? Yes, when one can get some very good Brass Quartettes. The Pinsuti's "Good Night Beloved" has been recorded by the Brass Quartette, the cornet, horn, trombone, and tuba playing respectively the soprano, alto, tenor and bass parts. The same plans as to pictures of instruments, mounted clippings about composers, artists, compositions, and stories, is carried out here just as with the bands.

These things may seem very elementary or trivial to you but a little inci-

dent which I experienced recently, convinced me that grown ups are quite as interested in knowing just these things. At the opera I had the privilege of sitting next to a lady who had heard this same Opera several times, and had enjoyed the opportunity of hearing it in Europe. We had a very good view of the orchestra from where we were seated, and during the intermission her attention was attracted by the orchestra. "Tell me," she said, "What is the peculiar looking instrument played by this man?" I told her it was a bassoon and further explained the instrumentation of the orchestra. She who could tell me so many interesting things of operas and singers, was equally interested in this bit of elementary information.

Under Orchestra we have only a few selections; two solos with orchestral accompaniment. A selection from Puccini's "Madame Butterfly" by Herbert's Orchestra, and Mascagni's "Ave Maria". Here one could have a splendid chance to offer the High School Orchestra the opportunity to listen to standard orchestras to recognize and follow the parts of the individual instruments. Not playing any instrument myself, I must listen to any one selection many times before I can really know it. The singing makes a quicker and more lasting impression upon me. So the singing of an arrangement of Beethoven's Minuet in G has made it mine, much more than listening many times, secured it. However, after hearing "Cavalleria" sung and having two pupils who also heard it say to me, "Why, they did not sing *Ave Maria*", made me realize that one needs to know a selection in its original setting as well as know it individually.

One could add to these a few overtures from some of the better known Operas, and oratorios, and have one selection by each of the Symphony Orchestras that have registered a selection on a record. This is the field wherein rapid strides are being made in the improvement of records. A record registering a greater number of instruments is being made possible. Registering every instrument in full orchestra is yet to be accomplished.

Under Vocal Solos we have a pitifully inadequate selection. I aimed to have the children know and recognize the different qualities of voice. The soprano are from selections too far advanced for grade children, only one Contralto and that not of the best, several tenors and one baritone but not one bass.

Under Vocal Combinations we are more fortunate. We have two Soprano and Alto duets, two Tenor and Bass duets, one Contralto and Tenor duet, three Male Quartettes, one Mixed Quartette and one Sextette.

Under Chorus we have seven old time favorites, among them the "Soldier" Chorus from Gounod's "Faust" and one from Verdi's "Rigoletto".

Under Oratorio we have seven selections from Handel's "Messiah" and three from Mendelssohn's "Elijah".

One should have some from others of the greater choral works such as Mendelssohn's "Hymn of Praise", and, as most high schools have an opportunity to sing at one time or another some selections from "Creation", and perhaps Gounod's "Redemption", I should include selections from these for an addition to the high school library of records.

From Opera we have three selections from Verdi's "Il Trovatore", three from Wagner's "Tannhauser", one from his "Lohengrin", one from Gounod's "Faust", one from Bizet's "Carmen", two from Sossin's "William Tell", two from Donizetti's "Lucia", one from "Lucrezia Borgia", one from Puccini's "Madame Butterfly", one from Sinetana's "Bartered Bride", one from Balles "Bohemian Girl", and from the "Mikado", two from "Cavaleria".

Unless one had heard the opera itself it is a little too difficult for most people to understand or enjoy selections from operas. They serve better to refresh one's memory of the delightful scenes one has viewed rather than to teach an opera where each aria has its proper setting in scenic effects and dramatic action. Artists on the concert stage hesitate to sing opera arias as concert numbers. We must not expect from a machine what an artist with all his powers of personality scarce ventures to attempt.



One can secure records correlating with music history from the days of David and Solomon (1056—975 B. C.) to the present. Every world movement with its effect on music or the effect of music on it, has been registered on one or more records. Of course these are reconstructed as I said before, according to what in the judgment or imagination of the record artist the music of that time consisted.

Science and mechanical genius have provided for us a machine to record inexpensively the things we see, by supplying us with a kodak. One travels over the world and secures pictures of every object of interest. One sees and hears the musical instruments played by people of other lands, secures a picture of them and attempts to describe the music. Modern science might possibly supply us with the means of securing equally inexpensive sound records. If this seems too utterly ridiculous it is well to recall that learned men laughed at the attempt of the flying machine cranks, and the development from the ridiculous stage to the perfected stage is well within one generation.

Let us sketch briefly the teaching of history of music with this aid within reach. We read of the peculiar instruments of Chinese and Hindoo made of wood, metal, skin and stone. We find a picture of the player and instrument.

Haven't you just wanted to hear how they might sound?

Much has been said of the difference in the musical scales of peoples on the earth. A gentleman who attended the Congress of Nations described the singing of a certain Hindoo, and stated that our major and minor modes could be clearly traced in his fantastic melody, sung in a thin high voice, with which he managed the many intricate turns and runs. If we could only have a sound record of such performance what a decided aid for our inadequate imagination.

We cannot secure records of the ancients but can secure some of modern representatives of these ancient peoples. One can get records of Chinese Opera. In a library of records belonging to one of our grade buildings is a record, of two numbers. The first time I heard it, it literally hurt my ears. I forced myself to listen to it about fifteen times in perhaps one year, arranging it to reproduce softly as possible. While I should not choose to listen to it in preference to a flute solo, I came to appreciate, to a certain extent, its melody.

We could go through history and find hundreds of descriptions of music which could be supplemented with actual records. Each occasion celebrating an anniversary of an eminent musician might be recorded in actual sound of his work, as reconstructed by enthusiastic admirers, instead of pictures of artists in scenes, printed programs, and newspaper criticism.

After the same manner the piano player might be used to exploit the history of the instrument from Cymbalum or Dulcimer, thru psaltery, clavicord, virginal spinet, harpsichord, to piano. Compositions for each of these instruments can be found and reproduced. One could show the gradual change from the sonata of the 15th century with the various influences of opera and dance tunes, showing the establishment of its permanent form by Haydn. Mozart, and Beethoven and developing into the modern form, illustrating with rolls played by modern composers and pianists. One's selection could be made varied and interesting by choosing from the German, French, Russian, Hungarian, Scandinavian (Norway), Italian, and American.

I have timed to discuss the utilitarian side of this subject rather than dwell upon the artistic or entertaining aspect. Aside from the pleasure afforded to us in the using of these aids to our work they are supremely worth while in affording us definite illustration of our work.

When we do consider these helps from an artistic standpoint we realize that tho they do not equal the actual performance of the artist, still they are the means of dispensing to the world a knowledge of the constructive heroes of the world, (for the history of human progress is written in music) an understanding and sympathy with all peoples of the earth thru their music.

Miss Mary M. Denby, East St. Louis, discussed the topic of "The Library for High School Orchestra as follows:

LIBRARY FOR HIGH SCHOOL ORCHESTRA  
Miss Mary M. Denby, East St. Louis

The material which should comprise the library for the High School orchestra, might be classified into two groups:

1st. Any material containing information bearing upon the orchestra and its problems.

2d. Working material—i.e. a list of music which might be used by High School Orchestras.

The amount of material available for the first group is necessarily small because books upon instrumentation and orchestration are rather scarce, and when we choose from these such as are adaptable to High School use we find the number exceedingly limited.

Among those I would suggest for practical use in this group are such as, "Orchestral Instruments and What They Do, Mason; "Music and Musicians", Lavignac, and "Instrumentation", by Prout.

Ordinary band and orchestra catalogues with pictures in them of different instruments are useful in making explanations about instruments and in classifying them into the four essential orchestral groups. (Pictures of some of the leading orchestras may serve as a lesson in arrangement or grouping of instruments.) Pupils take delight in searching thru these catalogues and pictures to see what they can find, and incidentally they pick up some information concerning the instruments which makes for a general interest in the orchestra. So simple a thing as looking thru these catalogues may often put an idea into some one's head which may finally lead to his procuring an instrument. If the teacher will watch her chance to answer questions and explain a few things here and there, these illustrated catalogues may form an important factor in scattering a general knowledge concerning the instruments of the orchestra among pupils who otherwise would know nothing about an orchestra.

I often use these catalogues in a sort of appreciation lesson. For instance, next Tuesday evening the St. Louis Symphony Orchestra will play in our school auditorium as a number of our Lecture Course. Many of our pupils have never heard this or any other great orchestra and know absolutely nothing of the arrangement and grouping of orchestral instruments. Consequently all the chorus music classes which come to me on the first two days of next week will be given a lesson on orchestral arrangement, the four choirs and the instruments comprising each. The catalogues will furnish pictures of the instruments so that the pupils will know what we are talking about. I am sure the pupils will enjoy the concert more after a lesson or two of this sort.

Under the second division of the topic, I shall consider the material for the High School orchestra, i.e., music suitable for High School orchestras to play. Under this head I shall furnish the names of a few folios and pieces which I have used with some success with my own High School Orchestra.

I shall divide the numbers into three groups for the convenience of some who might desire material for their own orchestras.

1st. Pieces adaptable for a beginners' orchestra.

2d. Music, easy or of medium grade, adapted to ordinary High School pupils.

3d. Music of more advanced grade but not too difficult for musically young amateurs.

If I were starting a High School orchestra, I should get a few good marches, two or three good, easy waltzes, and three or four popular song hits of the day. These latter have the advantage that every pupil knows the move-

ment and the time, and one does not have to bother about those technical things, right at the beginning. We also have to remember that in order to build up the pupils' musical knowledge, we must start with the things he knows and is interested in. Ordinarily we find that these popular airs have formed the larger part of his former musical experience, so we must begin there.

Whatever my pupils play I insist that they play it correctly, and I do not try to cover too much ground. I insist that they know a piece thoroly before they play it and I do not take *their* word for it. I must feel myself that they know it. If they are only playing some popular thing, insist that they do it right and do not let them play in public until you are sure they do their pieces well.

After we have played a few of these lighter things, it will be easy to get pupils interested in a few lively marches and then gradually lead them on to other and better things.

If I found my players were mere beginners upon their instruments I should get Ascher's Beginners' Folio or some other good beginners' folio containing some exercises. Usually these folios are better adapted to grade-school orchestras, but they could be used to advantage in High Schools where an orchestra must be worked up without any good players to fall back upon.

In most High Schools, however, can be found one or two good violin players and a fairly good cornet or two, and these will serve as a foundation upon which one may build his orchestra. Where some fairly good players can be found I should not use these beginners' folios at all but should begin at once with the popular pieces and marches.

It may be argued that the better players simply carry the others along. Perhaps so to a certain extent, but if the weaker ones take home the music and particularly if they get instruction on it from private teachers, they are greatly encouraged to find they can play beside some better player.

I believe that the greatest benefit the High School orchestra can be to its members is to give them such a thorough drill in time as they could never get elsewhere and to make of them in a few years good readers. If the leader can also induce them to continue instruction with private teachers, then one can begin to look for results that will make for music appreciation of a genuine kind.

I should classify in Group I besides the above mentioned beginners' folios:

I. Ascher's Standard March Folio.

II. Marches.

1. Officer of the Day.....F. B. Hall
2. Kansas City Star.....Liberati
3. The Bohemians.....Arthur Brown
4. National Melodies (from Fischer's National Anthems).

III. Waltzes.

1. Venetian Waters.....Jos. M. Daly
2. Perle de Perse.....J. C. Schmidt
3. Autumn.....Niel Moret (6/8)
4. Funiculi, Funicula.....Chas. Roberts (6/8)

Some of the popular pieces may be put in this group. The Sam Fox Publishing Company can always furnish the late hits in folio form if so desired. Usually pupils will have enough of these without ordering them especially.

We shall suppose that the second group is for players who have become fairly independent readers, who manage their instruments with some ease. With this class I should still use Ascher's "Standard March Folio" and would add Leo Feist's "Perfection Edition" Folios, both No. I and No. II. These contain good numbers most of which are standard classics. "Famous Medley



of Famous Songs" (Leo Feist) is also a very good folio and will furnish good selections for Memorial Day, St. Patrick's Day and other special programs.

I should continue the use of popular selections occasionally and should add to my library for orchestra in this stage such pieces as the following:

1. Stars and Stripes Forever (Sousa)
2. Hero of Isthmus (Lampe)
3. Spirit of Independence (Holzman)
4. American Conquest (Greenawald)
5. Spring, Beautiful Spring (Paul Linke)
6. Estudiantina (Waldteufel)
7. Twilight Memories (Lou Sievers)
8. Evening Star (Tannhauser)—Wagner
9. American Patrol (F. W. Meacham)
10. Home, Sweet Home the World Over (J. Bodewalt-Lampe)
11. Tee Chee (M. J. Jorie)
12. Blue and Gray Patrol (J. S. Cox)
13. Home Circle Overture (Schlepegrell)
14. Lutsiel Overture (Keler Bela)

In order to play the third and last group of pieces we shall suppose that the pupils read well at sight and that they are beginning to strive for tone color and finish in their work. Most of them will have had considerable individual instruction. The larger the number of pieces in the orchestra, the better the effect will be; but several kinds of instruments will be needed to get really the best effects. You must have some good soloists, at least a solo violin, cornet and clarinet.

#### *Folios*

The following is a list comprised chiefly of overture and selections which may be used by High School orchestras after they are fairly well advanced:

1. Fischer's Waltz Albums. Volumes I, II and III are all good. (Fischer)
2. Sam Fox's "Library Orchestra Folio" (Sam Fox)
3. Schirmer's New Concert Album (23 pieces, all successes)
4. Ginn & Co. Standard Song Classics

Other good pieces are:

1. Bridal Rose Overture, Lavallee (Carl Fischer)
2. Nautical Knot Overture—Rhys-Herbert
3. Araby—Al Johns
4. Tales of Hoffman (Selection)—Ascher-Tavan
5. Humoreske—Dvorak
6. Selection from Flotow's Martha (Tobani)
7. Katinka—Rudolf Friml. (Fischer)
8. Erminie (Selection)—Theo. Tobani. (Fischer)
9. Peer Gynt Suite—E. Grieg. (Fischer)
10. Mill in the Forest—Richd. Eilenberg (Fischer)
11. Mexican Beauties (Serenata)—Otto Langey (Witmark)
12. After Vespers—Moret & Lampe (Remick)
13. Golden Sceptre—Schlepegrell
14. Pilgrims' Chorus—Tannhauser (R. Wagner) Fischer
15. Toreador Song from Carmen—Bizet (Fischer)
16. Overture—Wedding March—Nocturne from Midsummer Night's Dream (Mendelssohn)
17. Selection from Serenade—Herbert (Fischer)
18. Maritana Overture—Wallace

The selection from the Musical Comedy *Katinka* is a good one, also the one from "Very Good Eddie". The time to play these popular selections is, of course, soon after they are published, or at least before they have lost their popularity.

Selections from musical comedies are very useful to stimulate and hold the interest of pupils, if the teacher is careful to select only the best of these pieces in lighter vein. Many pieces which were interesting last year are dead this year and most of them will never come to life again. So these do not build up the pupils' musical vocabulary very fast.

In the general discussion which followed, Mr. Morphy of the University suggested that in small orchestras it is often best to work out the composition first by means of a four-hand piano arrangement, which will fill in the gaps and more quickly give the members of the orchestra an idea of the way the composition should sound. In fact, it is often wise to make to four-hand piano parts a regular feature of the small orchestra. Carl Fischer has an edition of orchestra music, by Roberts, with solo violin parts and also a part for the Reed-Organ which helps to fill in some of the instrumental parts which are often lacking. The interest of the players is best preserved by enabling them to hear as early as possible how the composition ought to sound. This cannot be done in every case unless some make-shift like those above mentioned be resorted to.

Mr. Earl Swinney of the University read the following paper on "The Library as an Aid to the Study of Musical Appreciation".

THE LIBRARY AS AN AID TO THE STUDY OF MUSICAL APPRECIATION  
By E. Earle Swinney, University

As a nation we are moving at a very rapid pace. Pushed on by commercialism, we are possessed of the desire to get everything we have in the quickest possible manner.

All desire an education but the sacrifice of time seems too much for some and they fall by the wayside. We pass thru the grades; on to high school; then to college or the University. How is most of our knowledge obtained? Are we content to sit and absorb what we can in the class room or is there that desire to broaden our knowledge beyond that of the text book?

Education certainly includes two factors, that knowledge absorbed in the class room and that gained outside the class room by observation and self-study of books.

The library is one of the most important institutions in our education of today, for it affords unlimited opportunities for self-study. Its primary function is to furnish an additional incentive for intelligent and independent work in the school room; to arouse an interest in the unexplored field of knowledge outside of the text book; to bring students into personal touch with the best writers on any subject and to insure some appreciation of the higher forms of literary production,—a place for serious study and recreation. It has long served to excellent advantage nearly every department of the school curriculum, excepting the field of art and, especially, musical art.

No blame should be laid upon the library for this deficiency, for the demand for such a department has not been insistent enough to warrant the outlay of money needed to equip the department devoted to art. All agree on the importance of mathematics, history, English literature, science, and languages as subjects requiring a certain amount of "gray matter" to master and, so are considered necessary to the education of the youth. But what of music,—too long looked upon as something, not belonging to every one but meant for a chosen few, something to tickle the fancy and delight the imagination; only

cultural and social in its make-up, the intellectual problem being left out entirely?

Boards of Education have at last awakened or are awakening in some degree to the fact that music is a necessity to the child in school, and it is being granted a place in the school system, as a good, if not the best, mind trainer in the curriculum. Whenever it may be generally acknowledged as an intellectual force in the life of the child, then the demand for an adequate equipment in musical art can be made upon the library and it will be the same force in aiding music as it is in other departments.

Mr. Will Earhart, in his report on music in the Public Schools—Bulletin No. 33, 1914—gives the following tabulated statement in regard to the popularity of music subjects taught in high schools: 1st, Appreciation; 2d, History; 3d, Harmony. That the less formal and academic the plan the greater its popularity to the extent that when offered in an incidental way only in connection with chorus practice, either subject enlists a remarkably increased number of students.

Undoubtedly, time is an influential factor in bringing about this condition. College entrance requirements or vocational courses insistently demand the whole of serious endeavor that the pupil can put forth, though music may be of infinite attractiveness and interest to him."

The subject of Appreciation is a most important one in the High School and calls for serious consideration on the part of both teacher and pupil. Indeed, its foundation should be laid early in the grades, for it is a process of growth, a gradual moving forward and not something to be had merely for the asking. It is an intellectual accomplishment. So many different presentations of the subject are given, that there seems to be no standard as yet by which to measure.

If it is an intellectual accomplishment, then it ought to receive as serious consideration as does English or any other subject. It must mean quite as much. Certainly no one should attempt to teach it without proper preparation and a thoro understanding of what it involves. It so often means nothing more than the playing of a record or two from some opera with perhaps a pretty story told in connection, all of which is entertainment, but I am doubtful of any lasting knowledge gained thru such procedure; nor can we go to the other extreme by presenting too much of the technical so that the pupil is not able to absorb any of it. It must be a gradual unfolding process in the experience of the student.

If treated as an intellectual factor in education, then the library can be called upon to contribute to the cause by creating a music department where the serious student can broaden his musical horizon, inspired by class-room work in Appreciation courses; to seek new things for himself. The best writers on musical subjects,—History of Music, Opera, Oratorio, Orchestra and the Song should be a part of the equipment as well as the best musical literature—opera scores, songs, piano and violin classics, and the like.

The mere presence of an adequate equipment for courses in Music History and Appreciation will not insure any perceptible change in the musical life, unless proper use be made of the library in the same manner it is used in connection with any other courses. To be able to use intelligently such material as piano, violin or song classics, would mean a fair knowledge of sight reading, so as to perceive melodic outlines and musical form. Otherwise there could be no appreciation by looking at a lot of notes upon a page. A piece of ragtime might as well occupy the space. The pupil must then be inspired by the teacher to use the library, and just as much as he is able to read and understand just so much will be added to this accomplishment of Appreciation.

A plan not new, but one which ought to be used in connection with History and Appreciation, is the use of musical magazines and papers which, of



course, would be another contribution from the library. I have found by devoting one period per week to discussion of articles and items in our best musical magazines, gives the class a chance to know what is going on in the music world of today,—what the greatest artists are doing to promote musical growth in our country. It gives an impetus to the work that nothing else seems to do. The reading of such magazines serves them as recreation and at the same time broadens their field of vision in the music world.

If Appreciation is an intellectual process and can afford all the brain stimulus afforded by other intellectual subjects, then the library can do its share by contributing a place for musical art, where the pupil may satisfy his desire for further knowledge of Appreciation, inspired by the work of the class room.

I would urge in closing that the subject be taught in such a way that it gives to the pupil some real knowledge and not merely something to please and entertain him for the few minutes spent in class, that our High School students may become intelligent musical amateurs and leaders of the best musical enterprises in our communities.

Miss Nettie C. Doud of Springfield discussed the papers by Mr. Swinney and others as follows:

#### Discussion

The papers which have preceded have covered the subject under discussion so thoroly that there is little left to contribute. I only wish to emphasize the aims of the course in Musical Appreciation and the utilization of the material suggested. Mr. Swinney has presented Appreciation as an intellectual accomplishment and an educational factor.

Mr. Tapper in his new book, "The Music Supervisor", suggests that we appreciate the art, not from stimulation of general information about music and musicians, but from our individual knowledge and experience, that appreciation is solid wood not veneer, and that the success of the subject in the High School rests upon the foundation laid in the grades thro eight years of experience as performers,—an essential phase of music study that should begin with the teaching of the first rote song and be kept vitally alive all the way thru the grades and the High School. He suggests several methods of approach:

1. The Historical (Chronological)
2. By schools of Composition
3. By forms, (a) Instrumental, (b) Vocal
4. By Composers
5. Instruments, (Piano, Violin, Organ)
6. By Nations, (Nationality)

Miss Maguire has told us of her method of classification of records which was very interesting and profitable, and possibly our plan of handling the work in the grades may be of interest to some.

We have a traveling library of records and the classification this year is based principally upon instruments and nationality.

We have twenty schools and we purchased twenty carrying cases. Each case contains some records suitable for primary and intermediate grades with a classified lesson for upper grades. Box I contains records illustrating the strings of the orchestra, Box II the Woodwinds, Box III Brasses and Percussion. There is a lesson on the music of the South (Plantation songs, etc.), one on Indian music, College songs and patriotic songs, one each on England, Scotland, Ireland, Wales, Norway and Sweden, France, Germany, Italy, Russia, etc. Thru the office of the Board of Education, the boxes are moved once each month to the next building, giving each school a new set of records. Each case also contains reference material such as:

The Child's Own Book of Great Musicians by Thomas Tapper, for little children.

The Mentor, on Famous Composers, Masters of Violin, etc.

The Victor book on correlation, and a Graded list of Victor records; and will add—

Listening Lessons, by Mrs. Fryberger.

We feel sure that if we can assist the children in the grades to cultivate the desire to listen, reason and make comparisons concerning the music under observation, they will have an increased interest and adaptability for the subject as followed up in the High School.

Mr. Otto Kinkeldey, chief of the music division of the New York Public Library, in a recent paper suggests that direct teaching by word of mouth is not the only factor in education. There are pupils in every community whose desire to study does not stop with the instruction given in the class room, and a teacher's success may often be measured by the extent to which the pupils are inspired to go on learning by themselves. Books then, which are the formal expression of some one's experience, are the chief means in this process of self-education, but books left to gather dust upon the shelves of the public or school library will be of little value. It is careful use that makes them valuable, and the interest and enthusiasm for such study must be created in the class room.

Please pardon a personal experience. A few weeks ago I met a High School girl coming from the city library carrying a pile of books in her arms. On glancing at the titles, I read, "History of American Music", Elson; "Reminiscences of Fifty Years of a Musical Life", Hoffman; "Symphonies and their Meanings", and one other medium-sized book also on music. It looked to me as though some one was due to have musical indigestion, but I asked what she was doing with

all of those books, and she said: "Oh, I am going to read them. You know I am just crazy about that Musical History, and when a topic is suggested, I come right down to the library and find everything I can about it, then when the topic is asked for, I have all the material ready."

The papers given have been rich in material suggested, but it would probably be impossible for all schools to obtain or utilize the entire amount. I would suggest that a minimum list be made including the books and material most essential to successful work in the smaller schools and that the work be so organized that the material may be utilized to the best advantage.

After a request from the Temporary Chairman of the Conference that the members send in from time to time their suggestions for the program, the Conference adjourned.

#### PHYSICAL SCIENCE SECTION

This Section met in Room 119 Physics Building and was called to order by the Secretary, B. S. Hopkins, the Chairman, C. M. Wirick, being detained by illness.

On motion, J. A. Smith, of Urbana, was elected a member of the program committee to succeed C. M. Wirick. T. M. Barger, of Normal, was elected chairman of the committee.

A motion prevailed to the effect that each member of the section should aid, both by personal effort and by influence, the efforts of L. W. Williams of the Department of Physics of the University looking toward the standardization of the High School Courses in Physics.

The following program was presented:

#### Morning Session

"The Present Trend in Teaching Secondary School Physics", T. M. Barger, Normal.

Discussion: It is better in High School Chemistry and Physics to work intensively on essentials than to attempt to cover the whole field.

Affirmative: H. F. Schneider, Springfield.

Attendance 66.

#### Afternoon Session, joining with the Agriculture Section

"The Influence of the European War on American Chemistry", S. W. Parr, University of Illinois. "The Development of Agriculture as Influenced by Chemistry", R. W. Stewart, University of Illinois.

Attendance 85.



The discussions of the various topics follow in the order of their presentation:

#### THE PRESENT TREND IN TEACHING SECONDARY SCHOOL PHYSICS

Thomas M. Barger, Normal, Ill.

We believe it perfectly fair that a business man should expect a boy or a girl, who has successfully finished a course in high school Physics, to understand a number of the great laws of nature and to be able to take advantage of them in a practical way. That they are not capable of doing this is evidenced by almost daily complaints from business and professional men all over the country. Surely there must be something radically wrong with the matter taught or with the methods used in teaching this subject. From my experience as a student, as a teacher, as an observer of teachers, and as an instructor of teachers I am thoroly convinced that both of the above named troubles are prevalent. This opinion is further evidenced by the great falling off in the number of those electing this subject in high school. Officials in normal schools, colleges, and universities know that there is an increasing number of students seeking enrollment in their institutions who have not elected Physics in the schools from which they come. Government statistics also verify this. It seems to me that it is high time we teachers of this subject should awaken with the rest of the educators, hunt out the cause or causes of the trouble and then apply an effective remedy.

I had supposed the teaching of Physics in this country had experienced a progressive growth during the past fifty or sixty years. But upon investigation you may imagine my surprise to find that the conditions indicate just the reverse. In other words, this subject was far more interestingly and rationally taught fifty years ago than it is today in the great majority of schools. Perhaps the trouble might be summed up in a single statement something like this: In our enthusiasm to give our pupils a knowledge of the great laws that control the universe we have forgotten all about those to whom we wish to impart this most important information—the children themselves, their interests and their needs.

When this subject—it was called Naturally Philosophy then—was first introduced into our secondary schools it was considered of the greatest importance. It treated of things that were new, and when one had mastered them it gave him a standing among his fellows. To be able to explain the working of machines, or the telegraph, or the steam engine, was an accomplishment. Since that time machines have become so numerous and inventions have crowded themselves upon us so rapidly that the thought seems to have gained ground that to attempt to teach all of these is impossible, so let us stick to a few of the fundamentals, leaving it to the children to apply them as they see fit in after life.

In spite of the great falling off in the percentage of pupils electing this subject I am convinced that the children of today are as greatly interested in machinery and in the phenomena of Heat, Light, and Electricity as were their parents or their grandparents. But they are interested in the present day applications of these laws and principles and not in those of a generation or two ago. Suppose for a moment you are not a teacher of Physics but an ordinary lay citizen and have been considering the purchase of an automobile and are anxious to know more of the advantages and disadvantages of the valve-in-head, the L and the T-head motors. Suppose you went to a garage man and asked him concerning these. Also suppose he replied by asking if you know the mechanical advantage of a windlass for drawing water from a well, if you understood the steel-yard, the letter press, and the differential pulley? Would you consider the man crazy or would you turn from him in disgust and send to the manufacturers of these motors for information? Do you get my point? If not, let me ask one more question. Suppose a citizen of your town came to you asking for some reference book from which he could

get a good understanding of the alternating current motor and the storage battery, two instruments in daily use everywhere. Would you refer him to a high school Physics text, or to some practical work upon the subject? And yet, is not that just what we teachers of Physics all over the country are doing with our pupils? Instead of beginning with something in which they are interested and from that developing the need for understanding various laws and principles and then showing their further application with well known machines, we start in with pieces of apparatus many of which they have never seen nor heard and are likely never to see or use in their after life activities. And do we not expect our pupils, young people with practically no world experiences, to get an understanding of most of the subjects discussed from the text, a book whose treatment is so meager that we would never recommend it, even to an adult?

In the preface of nearly every Physics text issued during the past twenty years we find statements to the effect that this subject is of the most vital interest to everyone, that it treats of the reasons of the common experiences of everyday life, and that one pursuing the subject in *this particular book* will become greatly enlightened and grow enthusiastic over these great truths and laws of nature. Nevertheless we find the majority of those studying these books have been affected in just the opposite way and seem to emerge from the subject with the idea that Physics is a hard, dry study consisting of such memorizing of isolated principles and laws and the solving of many hard and impractical problems. They transmit this information to their younger brothers, sisters, and friends and as a consequence the following years witness fewer and fewer electing this subject. And I believe if we expect to change the conditions in our schools we shall have to renew the subject matter taught and also the methods used in presenting it.

A number of years ago I was teaching Physics and Chemistry in one of our Township High Schools in northern Illinois. In this school the subjects could be elected by either Juniors or Seniors, so I had pupils in my Chemistry class who had taken Physics with me the preceding year. And, as Mr. Wirick so aptly said last year, I was greatly surprised to learn how little most of them had retained—and I was convinced they had been well taught. This discovery started me to thinking and to studying my methods rather critically. I came to the conclusion that the methods were even more at fault than the subject matter. When I started out to teach Physics I naturally adopted the methods of the University and I was a sincere believer in the laboratory period and in individual laboratory work by the pupils. My experience began to put doubts into my mind, and little by little I cautiously varied the way of attacking the subject. The individual laboratory work with the sets of toy apparatus was lessened and more of these double periods were devoted to demonstrations, followed by live discussions of the principles involved and their applications in the everyday experiences of the pupils. It was astonishing what a great improvement was shown. As the years have gone by I have done more and more of this until now there is very little individual laboratory work required from my pupils in the way it was performed in the old days. The seven periods each week are devoted to demonstrations, discussions, and recitations. These demonstrations may be made by a pupil, a group of pupils, or the teacher, and commercial pieces of apparatus are used so far as our equipment permits. I find the students have developed wonderfully in their ability to think, that they like the subject, and that they work harder and accomplish more than they did under the old style of attack. I am convinced that the laboratory work, as carried on in many of our secondary schools today, is a great waster of time and a destroyer of interest. Far too many teachers have allowed their class room work to degenerate into little more than quiz sections and play periods and the real teaching that they do is almost nil. One of the greatest needs, if we are to have the subject of Physics restored to its proper standing in our secondary schools, is to have more good teaching done by the instructors. Then we must approach the work from the

standpoint of interest of the pupils, begin with the study of *some thing* and then develop such laws or principles as are necessary to the understanding of this thing. We must entirely discard the method of learning principles and laws and then, if there is time, mention one or two uses that can be made of them.

The Project method, you say. That is just it, the Project method, choosing projects in which the children already have an interest and wish to know more. Accompany this by good live teaching all the time and our problem will be solved in such a way that we shall have no further trouble. But some of you say, "We are doing this now, and the teacher who is not is behind the times." I agree with you, and I had thought this movement had become quite universal during the past few years. Imagine my surprise upon visiting a number of high schools in Illinois during the past year to find not a single teacher of Physics who was using anything but the old, individual sets of toy apparatus, the required per cent of error in the results of the experiments, and the quiz section instead of the recitation and demonstration. It was then that I thought such a paper as this might help to start some of our younger teachers upon what I believe to be a far more effective method of presenting this subject.

Perhaps a few specific examples will make my idea more clear. The study of the geared windlas and the differential pulley is usually difficult for the teacher and students, because few of our pupils have ever seen or will ever see either of these. But ask, "How many power plants has a watch?" and notice them sit erect and become interested. When you have received the correct answer, ask them how many times the minute hand turns round while the hour hand turns once. Then ask the same question, "How is it possible for this single source of energy to reach out and turn the three hands at these varying speeds?" and you will find your troubles with this phase of the work at an end. Any or all of the following questions, if properly developed, will have the same effect: What is the gear ratio of your automobile? What is the gear ratio of a street car? What are the R. P. M. of the motors in the manual training shop, and do the lathes, band saws, etc., turn at this rate? Ask the same question regarding the electric washer at home, or the toy automobile, or aeroplane belonging to a younger brother or sister which is run by a coiled spring. Even girls have been known to enjoy the work in mechanics when approached in this way.

The present is an excellent time for studying the mechanics of liquids and gases as the submarine and the inflating of automobile tires are things of interest to everyone. A bicycle pump and a pressure gauge will make Boyle's Law appreciated by the pupils as nothing else can and it will be understood by them in a usable way. But I want none of the  $P \times V = A$  Constant. I have often wondered why text books do not develop the six simple statements of this law which are likely to be of use at some future time, as:

$$\begin{aligned} V:V' &= P':P \\ V:V' &= D':D \\ V:V' &= p':p \\ P:P' &= D:D' \\ P:P' &= p:p' \\ D:D' &= p:p' \end{aligned}$$

Where  $V$  represents the volume of a confined gas,  $P$  the pressure upon it,  $D$  its density, and  $p$  the pressure of the gas.

I have always found the pupils interested in this development and it enables them to get an understanding of what the text is attempting to develop.

I have wondered of what value the teaching of Charles' Law has been to a pupil when he comes to school and tells of allowing his car to stand in the sun the other day and the tires became so hot that the air expanded and burst one of them. And yet I have known Physics teachers to accept this explanation.

The water system of the school building or of the town should be studied in connection with the work upon the Mechanics of Liquids.



I believe all the necessary facts relative to the subject of Heat can be developed most advantageously by studies of the weather, refrigeration, the heating systems in common use, and the steam engine. Before leaving this work the efficiencies of gas stoves, coal stoves, and cooking utensils should be determined and the fact brought out that it is sometimes a money saving proposition to throw away a favorite tea kettle, perhaps, and purchase a new one.

The subject of Electricity is so full of interesting, every-day-useful material that it seems a shame most courses in this subject are so barren. Of how much value is it if a girl, for example, can define the Ampere, the Volt, the Ohm, and the Watt; if she is able to state Ohm's Law, Lenz's Law, and Fleming's Rule, or can give the formulas for connecting cells in parallel or series, and delights to talk glibly of cycles and phases, and yet be unable to tell why, when she crowds the wringer on the electric washer at home, it blows the fuses in the house? I should like to ask this question, "Is it worth while, in our study of Electricity, to take up briefly the requirements of the Insurance Underwriters Association of our state?" Or should we go on allowing people blissfully to proceed as in the following case which occurred last year? A certain house was wired so that each circuit should carry not over six amperes. The boy of the family put in more lights and, as this blew the fuses and as he was the possessor of a "little knowledge" upon the subject, he forthwith purchased twenty ampere fuses and was no longer troubled. Of course I do not need to discuss the possibilities of such a procedure. Before closing the work upon this subject I believe we should offer a study of the chemical rectifier. I have always found it of great interest to the pupils and have found that one or more of each class has made one and put it into practical use at home. So far as I have been able to learn no High School text book upon the market today mentions this useful instrument, as it is so easily and cheaply constructed and is more efficient than the mercury arc rectifier.

I suppose there is no phase of Physics so poorly handled and so frequently omitted as that of sound. Boys usually dislike this extremely, but there is no reason why they should. Why not take it up by the study of some instrument with which they are familiar? And be sure not to omit a brief study of music. And above all, when you are teaching the children that the vibration rates of the notes in an octave vary as 24:27:30:32:36:40:45:48, be sure to tell them that in all probability they have never heard such a scale played. Give them a brief history of the development of music and discuss the equi-tempered scale. Boys have been known to show real interest in such treatment of the subject. I might add that I know of but two High School texts that even mention the scale of equal temperament.

The work in Light can be made interesting and of great practical value if built around simple lighting problems. If this work is taken up after the study of Electricity the pupils will be ready to make a comparison of the efficiencies of kerosene, gas, and electric lamps. The common misconception of the terms "candle power" and "foot candle" should be corrected, and the pupils taught the proper amount of light that should fall upon the printed page when reading. A study of the simple eye troubles and methods for correcting these, together with the camera and picture taking should be included in such a course.

The preceding illustrations have been treated rather meagerly and have been chosen somewhat at random, but my time is limited, as I hope to hear from all of you upon this subject this morning. That there is no text book published which approaches the subject in this way, I know. That no one can put such a method into successful operation in one year I also know; but if so inclined, we can gradually adopt such a method for presenting the subject of Physics and in a few years we can have a well developed system in operation. In fact I believe our Physics hour at this Conference next year could be used very profitably by having five or six project studies developed for us by Physics teachers who have worked out successful presentations of this kind.

To sum up my ideas along this line I would say, I thoroly believe our

work in Physics in the secondary schools of this country would be greatly improved and made far more interesting and useful if the study of Mechanics were built around the automobile, the threshing machine, the sewing machine, or any rather complicated machine that is of general interest to the members of the class; the phenomena of liquids and gases from a discussion of the submarine, the diving bell, and the bicycle or automobile tire pump; the work in Heat to include a study of the weather, refrigeration, the different heating systems, and the steam engine; if Magnetism and Electricity were developed from studies of the dry cell, the electric bell, the induction coil, the motor, the dynamo, and the chemical rectifier; the work in Sound to consist of an elementary study of music, or perhaps better, the study of some musical instrument as the piano, or the flute, or both; the work in Light could be made of the most vital importance if developed from a study in elementary problems of lighting and lights, the common troubles of the eye, and a study of the camera, with possibly an elementary treatment of the rainbow. Every law or principle of importance could be developed from such a series of studies and I believe they would have a meaning for the students.

It is possible that university men would be willing to help us in this movement and would like to know how this may be done. The following would prove of great benefit, if, in their schools of education, they would offer to those expecting to go out as teachers of this subject, a semester course in the Pedagogy of Adolescence and at least a year's course covering a series of projects that would involve the practical applications of the theoretical laws they have been studying in the university. I say this because all of the Physics teachers, with whom I have come in contact, who have just emerged from the university, have been woefully deficient in their ability to make practical application of these theoretical laws and principles. I believe there are other old teachers present who can testify to the same observation. Such a course should familiarize the student with the best High School Physics texts now upon the market, quite a variety of pieces of apparatus adapted to this subject, and should give them possession of the rudiments of glass blowing. The schools of education in our universities should adopt more of the methods of our normal schools in the preparation of the teachers they send out and should develop in them more of the view point of pedagogy, if you please. Academic knowledge is of great importance but it is not all important to the instructor. A teacher of any subject should understand the material upon which he is to work and should have some knowledge of the best methods to use in getting the desired results from this material.

In this paper I am making no criticism of university methods for university students, but it is when such methods are brought into the High School that they become ineffective and fail to accomplish their purpose. I believe it is a mistake to assume that a method, which may be excellent in appealing to the adult mind or to the mind which has acquired considerable academic knowledge, is also the proper one to use in teaching the adolescent mind. The adolescent is not interested in the abstract, theoretical development of a subject, but wants concrete explanations of things in which he is interested, explanations which tell the "why" in each particular case where it is asked. The fact that these reasons may be fundamental and far reaching in their application is not of great moment to him. I believe it is a mistake to attempt to transform the adolescent into an adult before nature has performed this function in the usual way.

The work along this line that is being done at the University of Chicago, at Columbia, and at some other institution of similar caliber is bearing fruit, but it is doing this slowly at the present time. However, I believe this method is the present trend in teaching secondary school Physics. If we teachers of this subject thruout the country would unite in working out a complete course of project studies this trend would soon become a movement of tremendous importance and I believe would result in the greatest good to the subject, to ourselves, and to the pupils in the high schools of the United States.

It is better in High School Chemistry and Physics to work intensively on essentials than to attempt to cover the whole field.

H. F. Schneider, Springfield.

In organizing the material to be used in High School Chemistry and Physics one must ever avoid using many isolated and unrelated topics, and instead must base the discussions on a few large fundamental topics. Each one of these basic topics must be so thoroughly discussed that it will stand forth as a mountain peak as pertaining to the general subject matter thus leaving a lasting impression in the minds of the students.

In order to clearly present the subjects of Chemistry and Physics, and to have the students know at the end of the year that they know something about these subjects it is necessary to treat them intensively, that is, types must be used as center around which to collect material for induction. The general truth, which is to be understood clearly and applied, is like a magnet lying at the center of every important lesson. How to get this general truth is the problem we must try to solve. Hence the type lesson which represents an object, a particular thing, or mode of behavior. It is something that stands out and above the surrounding material. It features the general truth.

A type, then has all the earmarks of a single unrelated fact, but it also has in it the suggestion of a large fundamental truth. We might take as an illustration, oxygen as a gas. It has six specific physical properties and at least three specific chemical properties. If this one substance is thoroughly understood as a typical gas the student will at once apply the same tests to other gases. This one type helps him to understand other substances, which are in the gaseous state. Furthermore if Boyle's and Charles' laws apply to this gas then they must apply to all gases. If the molecular theory applies to this substance then it also applies to other similar substances.

But how are we to present these type studies? Shall the student be given results informing him what science has learned, or shall he be guided to results by discovering them in the laboratory? Shall High School Chemistry and Physics be exact in every detail, full of accurate statements covering the whole field, or shall it awaken in the student a critical and analytical attitude toward the world? Shall we take up a few fundamental problems pertaining to the applications of Chemistry and Physics, thus reversing the history of science or shall we wait with these problems and applications until the theory has been presented and the science is mature?

Let us take an illustration from Physics where we wish to impart to the student some clear notion of physical forces. This is one of the best illustrations that has come to my notice. The question was; How is heat transmitted? The instructor began by developing the question in regard to molecules and their relation in this manner. He asked whether they had ever noticed the way in which bricks are carried in the construction of a building from the supply to the place where they are used. Two entirely different ways of transferring the bricks were brought out. One way was to have a line of men in which the bricks are passed from one to the other in the line. The other was for each workman to carry a hodfull of bricks from the supply to the place of useage. With this analogy in mind he showed by a few simple experiments that heat could be carried by iron from molecule to molecule, analogous to the line of workmen who passed the bricks from one to the other. On the other hand, as is the case when one heats water the molecules do not conduct heat from one molecule to the other, but each molecule upon becoming heated carries its own load of heat by a transfer of position thus explaining convection, analogous to the workman carrying a hodfull of bricks from the supply point to the place where used.

But do we as teachers of science as a rule present our subjects in this manner? Is it not a fact that we do not arouse the problem seeking attitude and do not focus this attitude upon the practical and natural surroundings? Our science text books are principally statements of results. The most general



and most easily accepted results are placed in the first chapters. A text book in Chemistry begins with matter and energy and then a treatment on changes. A text book in physics begins by telling about molecules and matter or by giving specific statements about the principles of mechanics. Naturally as scientists we think this the most logical way of presenting the results of science. What we are now presenting are courses of science rich in material and they are mostly results of the ablest scientific thinkers. The scientific attitude which ought to be cultivated in the students is an analytical and inquiring attitude of mind full of problems, not solutions.

We are surprised oftentimes that students are slow in becoming interested in science. It is because the problem seeking attitude is not developed. It is because we are overfeeding them with too rich and indigestible portions in the way of results that other master minds have labored with for years.

Would it not be desirable to begin the discussion of some concrete problem leading up to a large division of a course in science as contrasted to the usual method of giving results? Some concrete problem as given in the above illustration in Physics will serve to illustrate. Approach the subject in an entirely natural way. We might begin with the historical point of view. It matters not how we approach the problem so long as it will awaken in the students mind the inquiring attitude. But it must develop in him a keenness and alertness of mentality greater than that he now possesses otherwise it does not meet the needs it was intended to meet. If it does meet these needs then he will bring every experience he knows and all the supporting details that will apply will help him to verify this fundamental truth that now has become a part of himself.

If then we choose to make our treatment of these subjects intensive rather than deal with the many isolated facts without correlation how shall we determine what to teach? First of all there must be a felt need to understand some fundamental problem. There must be a desire, a curiosity to know the explanation of some phenomena. If we can arouse the curiosity of a student in a subject without giving the solution we have made the first great step in education. After the eagerness to learn about this problem has been developed we can then depend on it that the student will think the question through. Then he will bring from his experience and from the world a vast number of supporting details to clarify the fundamental question involved. The question will be so elucidated and will thereby become so fixed in his mind that it will never be forgotten even though the majority of the supporting details are forgotten. But just as many supporting details will be necessary to explain the fundamental problems taken up as there are now isolated and unrelated facts presented in many science courses. But these details which are all given equal weight and importance will, under the intensive treatment plan, serve as minors. They will not lose their intrinsic value in themselves, but will serve to support and make more valuable the great fundamental questions taken up for consideration. Each detail will be a cog in the machine that will make the machine what it is, and even though they are forgotten, the machine itself, the great and important nucleus, after it has thus been clarified, will never be forgotten. The details will be so organized and arranged that they will throw light upon the question to be solved. They will not lose their relative value, but in so far as they serve a large and vital unit, they in themselves will become more important.

The intensive treatment of Chemistry and Physics would be incomplete without full recognition of the large contributions made in the advancement of education by the aid of laboratory courses. The introduction of laboratory courses is hardly a century old and yet its feasibility as a means of instruction has been so completely demonstrated that any course of study which adopts the laboratory plan is sure of being seriously considered and deemed worthy of receiving a thorough test. It is simply because of this fact, that the laboratory exercises give the student that which most of our text books do not give. The text books are full of results and the laboratory method is full of problems to

be solved. It is in the laboratory that the student develops technique. He learns to become a close observer and from his observations he draws conclusions.

Is it possible then that the laboratory method can prove a failure? Perhaps this question can be best answered by means of this illustration from A. Smith and E. H. Hall, *The Teaching of Chemistry and Physics in Secondary Schools*. Chapter IV. The abbreviated directions are as follows:

First, the object of the experiment must be definitely stated. Second, the apparatus must be lucidly described. Third, a minute and practical description of the materials must be given. Fourth, the handling of the material and apparatus must be made clear. Fifth, the point at which an important observation may be made should be indicated. Sixth, some indication is necessary as to what is to be observed. Finally, definite questions should be asked in regard to the interpretation of what has been observed.

What then does this method of procedure mean? It is just simply this, that the student is of too immature a mind to find his way alone. He must be guided and informed what to do and what not to do so that he may come to results in the easiest way. Otherwise he may waste too much time and probably not arrive at any conclusion at all.

The solution of this would be to so guide the student that he becomes a self-reliant truth seeker. The great danger of the laboratory method where individual teaching is predominant is to use it as a labor saving device. We must not solve the problem for the student by giving him the solution, but must see that he finds out for himself with the least amount of direction. Individual teaching is not meant to level mountains for him. It is intended to make a capable and fearless mountain climber. The problems the student solves now will develop in him a self-reliant and fearless attitude toward the problems he will later meet with after he is no longer under the guidance of an instructor.

Then science will be something more than a vast number of results received as a matter of fact. It will be a body of generalizations so correlated and scientifically arranged that it will serve him in future need. The intensive treatment of Chemistry and Physics will then become for him a system of thought.

#### References:

Psychology of High School Subjects.....	Judd
High School Methods.....	Parker
The Method of Recitation.....	McMurry

Mr. E. W. Davis who was to have discussed the opposing view of this question did not appear and so we are unable to present his paper.

As announced the afternoon session was held jointly with the Agricultural section. At this session two papers were presented. The Development of Agriculture as Influenced by Chemistry, presented by Dr. Stewart, of the University, is given in connection with the proceedings of the Agricultural Section.

The second topic, The Influence of the European War on American Chemistry, given by Professor S. W. Parr, of the University, is here presented. Professor Parr spoke as follows:

#### THE INFLUENCE OF THE EUROPEAN WAR ON AMERICAN CHEMISTRY

The events of the last two years have given to the subject of Chemistry an unusual prominence. The world seems suddenly to have awakened to the fact that chemical science is a fundamental factor in almost every phase of our mod-

ern life. Two and a half years ago civilization, so to speak, began shooting itself full of holes and the little daylight transmitted by the process seems to be surcharged with chemical, or perhaps we should say with actinic rays. Certain reactions are already strikingly manifest as a result of these unusual conditions, and chemical interests throughout the world are actively engaged in studying the problems involved. The teaching of chemistry may not need any stimulus to new activity but it will get it whether it needs it or not. It is not primarily the purpose of this paper to discuss or give advice or offer suggestions as to how the high schools and the University ought to proceed under these new conditions. It is rather to survey the field in its broader aspects, or as a student room mate of mine used to say, "to take a bird's-nest view of the situation."

It may be profitable then first to note some of the more evident reactions above referred to.

In September of 1915 occurred in New York City the first exposition of the products and appliances pertaining to the chemical industries of this country. The exposition was made at the Grand Central Palace, New York City, and consisted of about 100 exhibits. The manufacturers were so well pleased and the chemists so surprised at the showing that all were eager to try it again.

In April following, a second exposition was held at Urbana, Illinois, in conjunction with the Annual Meeting of the American Chemical Society. The success of this second venture was no less significant than in the first instance. The very liberal space set aside in the new chemical building was overrun by at least 50% of the original allotment. Something over 50 exhibits were installed covering from a wide distribution of territory from New York to Denver. Incidentally it may be remarked in passing that the attendance on the part of members at the annual meeting of the chemical society at Urbana exceeded in numbers that of any previous meeting not excepting those held at great industrial centers such as New York and Boston.

Since expositions are said to be the milestones which mark the rate and degree of progress, one more reference of this sort should be noted.

Last September occurred a third exposition at the Grand Palace, New York, participated in by 250 exhibitors and more than doubling the space occupied by the first event. A detailed study of this exposition would in itself furnish perhaps the most direct information as to the status of chemistry in this country but we need to include also other view points.

For example, membership in the American Chemical Society has suddenly increased until it passes by a considerable margin, the 8,000 mark with an annual budget of over \$100,000, making it the largest chemical, if not the largest scientific society, in the world. The council and directors of the society at this last annual meeting put in charge of their industrial journal the president of the society and probably the best equipped man in the country for the job, taking him away from a University professorship and doubling his salary. Again, the council, appreciating the general interest in chemical affairs initiated a plan for a popular magazine or periodical of some sort which set forth chemical facts and development in not too technical a manner with the idea that while truth is more of a stranger than fiction in such matters, it need be none the less readable and indeed entertaining even though confining itself within the bounds of truth.

Here is another straw indicating the direction of the air-currents. At the above meeting the metropolitan press opened its columns as never before:—competent reporters were detailed for the meetings and these were met from the standpoint of the society by a carefully organized bureau or committee having ready to hand the information sought for by the reporters, and of course where technical facts were dealt with they were correctly stated. It is doubtful if any scientific meeting in this country ever received either the amount of space or the intelligent handling of such wide perusal by the public as that accorded the press reports of the last annual meeting in September.



By contrast I am reminded of a previous meeting of the society in New York City held some ten years before. The press reports for that occasion, or more correctly speaking, the lack or the absurdity of them was a standing joke among the members for some time afterward. The situation at the time may be illustrated by the following incident. One of the reporters who was present at one of the sessions accosted the writer in the lobby as follows: "I am a reporter detailed by the \_\_\_\_\_ Daily to get some items in connection with the meetings. I don't know a thing about the science. I don't know the terminology and I wouldn't know a chemical element if I met it in broad daylight, but I've got to write something and for heaven's sake give me a lift."

My purpose in noting this incident is not to center blame upon the reporter, the newspaper, the public, or the management of the chemical society, but merely to emphasize the fact that times have changed since then and life, at least chemical life, is a different thing.

Here are a few other points of interest.

It was made evident in Congress at the last session that under existing laws the chemical industries in this country were wholly at the mercy of foreign manufacturers. A bill was introduced and passed which sought especially to safeguard the industry against "dumpage" and similar acts of piracy and while there was permitted to be injected into the bill a provision which largely nullifies its value, still the intention was good and the slip is quite as likely to have been made through chemical ignorance as otherwise. Someday when an expert commission is established to handle tariff legislation it may call for chemical information and proceed more intelligently.

Again an unprecedented demand has arisen for chemists. The experience of the department here is only a repetition of that which seems to be common elsewhere. The calls for chemical graduates for more than a year past have exceeded the supply many times over. Note also that the demand is more frequently than formerly for well-trained men of experience. Even the minor positions almost invariably stipulate that he must be a graduate in chemistry or chemical engineering. A very considerable number of research departments have been organized in connection with some of the larger establishments and these have been put in charge of men who have had the most thorough training on the purely scientific side of the subject. The reflex effect of all this has been felt of course in a marked way in the registration of students who are specializing in chemistry. For example, the registration in Chemistry and Chemical Engineering at the University of Illinois for the current year has exceeded that for 1915-1916 by over 40%.

Enough has been said perhaps to indicate the wide-spread activity and interest in the subject. It may be well to discuss for a moment the broader aspects of the case as relates to the national environment or perhaps the temperamental setting upon which the success of any great movement depends. Are we as a people ultra conservative in our habits of thought and industrial adaptations? Are we a real nation with a nation-wide consciousness of our needs, our opportunities and our obligations, or are we simply a group of individuals with every one hustling for himself without concern as to how many fellows may be hindmost and all the time forgetting that the devil is never content with just the stragglers in the rear. What I believe is this, that the science of chemistry may become and frequently is a great national force with a subtle influence extending far beyond the specific industries where certain of its tenets prevail. One can hardly study the national and industrial development of Germany for example without being impressed with the fact that here is an illustration of the old Heraklitick Philosophy, that everything is in a state of flux, and transformation activities are the constant and the orderly process of nature. This, moreover, is so fundamentally and so characteristically a chemical proposition that any general study of such a system cannot avoid producing characteristics which are related in type. If motion and progressive development are essentials to industrial life they must characterize the men back of such activities if anything worth

while is accomplished. On the other hand if we study the industrial development of England it seems to be dominated by a different philosophy. There is more rigidity. Things are fixed. The habit of mind is more like that of John Calvin and it is sufficient defense for any procedure that it has always been done so. Such rigor doubtless has its virtues but the danger of *rigor mortis* is a serious one. W. R. Whitney writing in the journal of Engineering Chemistry for October 1915 has this terse paragraph: "The English educational system is founded upon classical ideals and controlled and self-perpetuated by the victims of its method to whom science is an intruder upon the curriculum, a disturber of the decent customs of the past." Lest we be considered over-critical of the English Educational system, let it be noted as a hopeful state of affairs that Englishmen are even more critical of themselves. H. E. Armstrong in an address before the British Association, August 1914 (Nature 94 p. 213) refers to Huxley who in 1861 pronounced these prophetic words. "Physical science, its methods, its problems, and its difficulties will meet the poorest boy at every turn and yet we educate him in such a manner that he shall enter the world as ignorant of the existence of the methods and facts of science as the day he was born. The modern world is full of artillery; and we turn our children out to do battle in it equipped with the sword of an ancient gladiator. Posterity will cry shame on us if we do not remedy this deplorable state of things. Nay, if we live twenty years longer, our own consciences will cry shame on us." Professor Armstrong proceeds with his own comment uttered, let it be remembered, only 15 months ago as follows: "Now after more than 50 years, not 20 merely, we still go naked and unashamed of our ignorances; seemingly there is no conscience within us to cry shame on us. I have no hesitation in saying that we have done but little through education to remedy the conditions of public ignorance which Huxley deplored. In point of fact he altogether under-rated the power of the forces of ignorance and indifference; he failed to foresee that these were likely to grow rather than fall into abeyance. In England, what I will venture to term the Oxford spirit, still reigns supreme, the spirit of the literary class, the medieval spirit of obscurantism, which favors a backward rather than a forward look."

In further explanation of what he means by the "Oxford spirit" Armstrong continues: "Englishmen, poor devils, have never been allowed, let alone encouraged, to study in any effective manner, either at our public schools or at the ancient universities, and the opportunities have been few elsewhere. During 40 years past Oxford has been without a chemical school—how could chemists be trained there? What is far worse, the business community have received no training at our great schools and universities which has in any way helped them to become acquainted with the idea of science. We are simply victims of the literary party of which the lawyer-politician is the supreme development! He grips us everywhere. \* \* \* \* \* The Oxford tradition that it is necessary to be well-read and play games in the afternoon has dominated the situation."

Sir Ronald Ross, in Nature for 1914, p. 366 says this: "The war now raging will at least demonstrate one thing to humanity—that in wars at least the scientific attitude, the careful investigation of details, the preliminary preparation, and the well thought-out procedure bring success, where the absence of these lead only to disaster."

Professor Armstrong, before the London Society of Chemical Industry recently put matters in this form: "In view of the proved ability of our Government Departments to deal with issues which are essentially scientific to appeal for help, as nominally the Royal and Chemical Societies have done to those whom we have been forced to describe as flouting science, who hold it in disrespect on account of their entire ignorance of scientific method is a confession of failure beyond words to describe. Our plain duty in this Society is to organize ourselves and when we are organized to claim the right to guide Government." Such an organization, consisting of an advisory Board composed mainly of eminent scientific men was formed late in the year 1915 to co-operate with a committee of the Privy Council.

An editorial in *Nature* for 1915 p. 619 says of this scheme: "By its inception and publication the Government acknowledges and proclaims its appreciation of the work of science, and by this acknowledgement alone gives scientific workers that encouragement and prestige in the eyes of the country which has too long been withheld." This extended reference to the situation in England furnishes a good mirror to hold up for our own scrutiny. Possibly we may recognize little if any of our own features in the glass. Let us be not too confident. Self-complacency is not supposed to be an attribute of science.

Emerson has said that in the old days of Rome they would dry up a man to make a grammarian and expressed the hope that the better judgment of the republic would save us. Just how safe we are may be an open question. At any rate the times through which we are passing furnish an excellent occasion for taking account of stock.

It should be noted especially that the national temperament and habit, the lack of which is so seriously deplored in England, is promoted by all scientific work and is not to be credited to any one branch alone. If Physics and Metallurgy and Chemistry have their field of activity and accomplishment which stands out with prominence just at this time, the same would be no less true had we time to review the field of the natural sciences and their relation to medical and bacteriological research, the study of plant and animal diseases, sanitation, food production, etc.

In the light of these passing events we should be impressed as never before with the work of the pioneers in establishing in our own country the new knowledge and this institution has its own peculiar share in it. We are just beginning to realize the prophetic insight into the educational needs of their day on the part of such men as Jonathan Turner, President Gregory, Professors Burrill and Forbes. Indeed at one time, so important a place was given to scientific instruction that it was accorded the honor of a distinct and separate unit, a College of Science, in the organization of the University, a measure of distinction and recognition of the importance of the scientific field not attained by any other institution in the land. This feature has disappeared it is true, and the "grammarians" who now drive the educational chariot have turned that vehicle back 50 years on its course. Whether the method of propulsion is an ox or an Oxford team has not been determined. Nevertheless, science and the scientific method have become established. We have attained to a certain degree, the habit. Let us hope that events will prove that science rides in a high-powered automobile with three speeds forward and no reverse gear attachments.

I said at the outset that I did not wish to discuss any phase of the question as to how chemistry ought or ought not to be taught as a result of the new emphasis accorded that topic. I only wish to offer a word of warning. In all the discussion and publicity given to chemical accomplishment in these days there is one dominant note,—*"research."* To promote it great laboratories by rich industrial concerns are established. Millions are spent in operation and endowment and we are almost spell-bound at the recital of notable accomplishments. Do not let this feature take a too prominent place in the teaching processes. Stick as closely as possible to the pure science. There can be no real research that has not at hand the tools of pure science. As some one has stated it, *"There can be no applied science until there is a science to apply."* The two, indeed, abide together and are one, but the greatest of these is pure science. Generalization must come first. After specialization sets in there is poor chance for further generalization. It is doubtful if specialization should be tolerated at all or to any degree before the Junior or Senior year of the University course.

These features, however, cannot be discussed at this time. The point I wish to emphasize is the fundamental and far-reaching importance of science teaching, the virtue of which has never been so acutely demonstrated as in these days through which we are now passing.



## SOCIAL SCIENCE SECTION

The morning session of the Social Science Section was called to order at 9 o'clock by Principal M. L. Flanigan who served as chairman. A paper entitled "More about the museum of history" was presented by Professor E. C. Page of the DeKalb Normal School.

## MORE ABOUT THE WORKING MUSEUM OF HISTORY

E. C. Page, DeKalb.

It is presumed this assemblage needs no abstract argument as to the use of a museum of history. We shall also assume that most of our hearers have at least a cursory knowledge of the articles on a working museum of history published during the past two or three years in the History Teachers Magazine. The task for us today thus would seem to be to amplify ideas already given some degree of publicity and perhaps to illustrate those ideas by some recent concrete experiences.

That we have a museum of history at the Northern Illinois State Normal School should not be a particularly startling fact. For, if it be conceded that museums have educative value, normal schools above all others should endeavor to have them. We fear, however, a census of the normal schools of the United States would reveal very few as having any collection deserving the name of museum of history.

Judging from the comments of visitors and from correspondence from all over the United States prompted by hearing of our museum, we judge that whatever there may be of the unusual in our undertaking consists (1) in the sort of material we seek, (2) in the manner in which we acquire it, and (3) in the extent of the use to which we put it.

First then, as to the sort of material we are gathering. Anything is "grist for our mills", provided it shows in any way how men have met the problems which have confronted them and have solved or attempted to solve those problems. So the age of an object does not of itself determine its value for a museum. Some article used by our "contemporary ancestors" in other regions, by which they endeavor to accomplish something we ourselves are trying to do, may throw a sidelight upon the process and may thus acquire great historical value. For instance, a collection of various sorts of foot-wear from different countries of today will teach as much history as a series of such articles running back through the centuries.

It will readily be seen we have no place for more curios or freaks. Such things frequently come our way. Occasionally we have to accept them for fear of offending a well-meaning but not discriminating donor. We then give them as inconspicuous a place as possible and never call attention to them except when the donor or his friends are around. Usually we can refuse them without offense by explaining that they do not fit into the needs of our particular department. Occasionally they are of such a nature as to serve some use in some other department. In that case, we accept them and indicate that we shall turn them over to the department where most needed.

Personalia are of varying degrees of value. A flower and a bit of drapery from the funeral car of Gen. Grant or a piece of the cedar tree in which was the eagle's nest which gave occasion for Margaret Fuller's poem, "Ganymede to his Eagle", seem to us of comparatively slight value. But a square of wall-paper which was on a room in a house in New Hampshire when Washington spent a night in the room, or a wool spinning-wheel, which was once owned by the Custis family, are of value not merely because of their former association with Washington but also because each reveals something of former times.

We would like to have an Egyptian pyramid out in the meadow on our

campus, an old Greek temple to use for a social building, and a Roman triumphal arch as an entrance from Lincoln Highway. But really they would not be nearly as useful to us as a reaping-hook, a McCormick reaper, a Marsh harvester, and a self-binder. The one series of objects would show how some portion of a community accomplished some of its ideals. But the other series shows something of the evolution of the process by which the mass of the people have struggled to provide themselves with more and better food—a fundamental of life. Besides, we can never have a pyramid but we do have the series of implements and other schools may have them.

What we are trying to say is that the everyday life of the average man is what interests us most all in history. Consequently, those articles which have been used by the average man in his everyday life appeal to us most mightily. We seek mostly the things of everyday life not simply because they reveal that sort of life, but because they are obtainable to a greater or less extent by anyone. We would build-up a museum which will encourage others to go and do likewise. We endeavor to impress upon our students the fact that one article of the right sort is a start toward a museum and that a second article marks a gain of one hundred percent over the start. We are very glad to know that several normal schools and high schools and even some elementary schools are following our example and are acquiring considerable collections.

Now as to obtaining our material. In the first place, we buy practically nothing. Why do we not buy material? For one reason, because we have no fund for doing so, though we imagine that difficulty could be removed in an emergency. For another reason, because, if we began buying the sort of material we are particularly seeking, we would soon be flooded with a lot of offers of worthless stuff. Besides, we could never get anything without buying. But our principal reason for this course of action is to demonstrate what can be done without money and without price. In a little over four years we have obtained articles, great and small, numbering up into the thousands. What we have done anyone can do.

How do we do it? In various ways—principally by keeping our eyes open and by getting after the things seen. We have the museum constantly in mind and we try to cultivate in ourselves quickness in perceiving the historical utility of things about us. The consequence is we are constantly picking up material which is useful to us.

Permit us to make the matter clearer by a few concrete experiences just as they chance to come to mind. While writing these very paragraphs, we stopped to empty a waste-paper basket. On top was a document-appearing paper, which we instinctively glanced at to see if something of value may not have found its way into the refuse by mistake. The document turned out to be a pass-port which had expired and had been thrown away by a friend from China who has been visiting us. Here is an actual pass-port to vitalize a portion of the work in civics. It is signed by a well-known man (Wm. J. Bryan), adding a distinguished autograph to our collection. It is impressed with the great seal of the United States, something which most of us see only in picture form. On the back it is endorsed in Russian and bears a Russian stamp or seal. It was mighty lucky that we glanced into that basket.

A short time ago, while in an Ogle County town, we were walking past a log-cabin which we knew to be a relic of the earliest settlements in that vicinity. We remarked to a friend that we wished we could move that old log cabin to our campus. He said, "Of course that is impossible, but maybe there are old things in there to interest you." As he owned the cabin, we went in and there we found, among other things, an old dulcimer, which very shortly was crated and sent to us. A friend in DeKalb, seeing the dulcimer, went home and found in his attic a zither, which he brought to us. Now the head of our music department has at his command two kinds of instruments which are disappearing

from use, but which enable him to make clear to his pupils the evolution of the piano and the type-difference between the piano and the harpsichord.

We had hardly started our enterprise before friends began to be interested and to seek to increase our stores. In an ever widening circle our interested friends have increased in number until today many are constantly on the lookout for us and articles are constantly coming in our direction. We have abandoned all superfluous modesty in asking for things we want, when we see them. We take the ground that the Normal School is a public institution and that it is everybody's business to help promote its interests. Consequently, when we ask for contributions to the museum we are not asking a personal favor but are seeking co-operation in a public enterprise. We could recount many instances where such an appeal has wrought its purpose.

The History Teacher's Magazine of December, 1915, gives in detail the various ways in which we put our museum to use, so that it is vertiably what we call it, a *working* museum of history. It is not our purpose to go over that ground again. We content ourselves with a few recent experiences selected rather at random.

Just before the recent election we arranged a special exhibit throwing light upon past presidential elections. Among other things, we had a portable wall-case well filled with campaign badges, emblems, etc., some of them going back as far as 1840. One of them was a ballot actually used in the election of Jefferson Davis as president of the Confederacy. To our mind, it was clearly the most valuable of all the lot. We offered a prize of honorable mention in General Session to those picking out the most valuable specimen. The consequence has been that large numbers of students have carefully studied the collection. To form a judgment they have been compelled to recall much political history. The results were varied, but all evidenced careful consideration.

The taking of museum material into the class-rooms of the elementary schools has stimulated the interest of many of the pupils to visit the museum for themselves. This visitation, by individuals and by little groups, we not only allow but encourage. The children come unattended and wander about at will. Sometimes we casually call their attention to some particular things or explain something that seems to puzzle them. We encourage them to come to us with questions. The result is that, with quite a band of boys and girls, we have ceased to be a "professor in the big school" and have become a sort of big brother or chum.

But, we hear it said, such interest is only curiosity aroused by the unusual. Well, we presume it is in some cases. There is always an unsaved remnant. But we know it is not so in all cases. Many boys and girls watch their history, geography, and reading lessons with great keenness and then search and study the museum to see if there is anything to illustrate those lessons. Children, even down in the intermediate grades, show surprising alertness in discerning the material adapted to their purposes.

Do we loan articles to the children without the requisition of the teacher? Most certainly. Why not? The sense of discovery and contribution is greatly stimulating to them. They almost quarrel for the privilege of exhibiting the articles to the class. One day when they were reading some pioneer story, two third-graders came over and borrowed one of our ox-yokes. We learned afterward of the glee with which they got down on all fours in the school-room and put their necks under the yoke in order to show to their fellows how it was used.

In one of the schools there are some boys from untoward surroundings, belated in their education, who are slow in their work and sometimes hard to manage. The unsanctified have dubbed them "rough necks." Two of them, in particular, have taken great and intelligent interest in the museum and visit it very frequently. We were warned to look out for them, for they would be



rough and injure things and they would be sure to steal things. We resented the warning, for we had faith in the boys. We not only did not take pains to watch them, but rather we took pains to leave them alone. We also loaned them material to take to the Training School. Not an article has been injured. Not an article has been stolen.

In passing, we may remark that in the four years and a half since we first established the museum, only one article has been lost—a modern Chinese primer and we have a duplicate of that—and only one thing has been broken—an Indiana bone knife and that was easily repaired. These facts are true notwithstanding the museum is wide open all the time, five hundred Normal students and hundreds of Training School pupils have unrestrained access to it constantly, and many strangers visit it almost daily. We have no attendants to watch things.

We must close. It may readily be surmised that our museum is not far from where we do our work. In rooms near at hand and in corridors adjacent to our recitation rooms and our office, indeed in those very rooms themselves, to a degree shocking to our assistant, are to be found these our treasures. We are sorely in need of more space and we could find it at once in distant parts of the building. But we prefer to endure our present restrictions for a little while till more ample accommodations can be provided near at hand. We are endeavoring to make the working museum as integral a part of the department of history as the maps and charts, the pictures, the lantern, the blackboard, or any other of the equipment. To do this we must be in close proximity to it, indeed, we must be in the very midst thereof.

The discussion of this topic was led by Katherine Renich, Clinton High Schools, as follows:

During the past few weeks I have written letters of inquiry to some ten or twelve schools in our state and from what information I have been able to secure the plan for "The Use Of A Museum Of History," suggested by Prof. Page, seems to be a new one for High School teachers to consider. There are a few schools where a certain type of museum work is being worked out but on the whole no definite results have been so far obtained which prove the real value of the experiment.

From what I have read of Prof. Page's work I see at once the value of this kind of thing in the grades but am more hesitant in accepting it as of special importance in the High School class room. I wish to present my reasons for not encouraging the use of the ordinary museum in the High School and then to suggest phases of museum work which can be found very helpful and which it would be well to encourage. If the museum is to be simply a means of entertainment and such it will be to the High School student if a certain type of object is used, I say "no", and unless such material can be secured which will really enlighten a young man of sixteen to eighteen years who finds in this an opportunity to broaden his view of historical things, I believe time is wasted and the museum is a detriment. If this be true I ask if it is possible for the High School teacher to obtain the kind of material which will be of historical value to our students. I do not believe the Ancient History teacher can go beyond the use of pictures and maps. The European or English history teacher might find it possible to secure material, altho I doubt very much if it can be done. If it would be possible to have sent into our schools some of the material found upstairs in the University museum we might have reason to encourage this work. However unless this were done our objects would be but hit and miss picked up material that would mean nothing to the great field of history which must be studied within an allotted time. For this to really mean anything, many types of one kind of thing must be shown.

Of course all material brought in from the outside is valuable as side lights to the students and any number of objects which may be viewed outside of the

classroom develop an interest in the work, but as I understand the museum which is being considered here, it is a workable means within the class room to open up and help develop the regular line of work. This I insist is too expensive, for the High School to find practical.

In the United States class room a somewhat different attitude may be taken for we are able more easily to find relics which are a source of knowledge to all of us. However I question if even here relics of Indian life, the spinning wheel or the early coins serve more than a casual bit of interest to the boys and girls of senior age in High School, in fact this kind of thing is seldom a new thing to a student as far as this in school.

Now let us turn to another side of this museum question. What phases of the plan suggested can be used by High School teachers? First and most important is the use of pictures. Every history room should be made a picture gallery which serves not especially for class room study but for the student's inspiration and appreciation as he from time to time enjoys them. Pictures for every conceivable period in history may be obtained inexpensively and each pupil should find something to interest him upon the walls. To be sure some of us have too little space to put up pictures for all the classes at the same time. This problem can be solved however by having pictures illustrating work of each class taken up in turn. Last year we started out with a general list, one side of the room being given to Ancient and another to European, besides some pictures of general interest. From time to time these were changed and when the class in Ancient History was studying the Periclean Age and drew their own pictures and maps to illustrate the period, the drawing of each student was hung up and for some few weeks the room was strictly a gallery of Ancient History. This kind of thing certainly arouses real enthusiasm and some splendid results are obtainable. Later in the year the United States students suggested that they wanted a chance to decorate and with their help various new United States pictures were secured and the room was given over to this sort of study. I find it hard to secure the best history pictures to illustrate United States history for some way so many of them are not real history. I refer especially to the pictures of puritan life, as of Miles Standish and Priscilla, and of the French Acadia, with its Evangeline. They are literature thru and thru and though good in their place, what we want are more real facts. A list of pictures showing the Congressional Library, the Supreme Court Room or even better the Houses at work give definite knowledge. Then pictures of the great steel factories of our country, or the flour mills of Minnesota, and the cotton plantations of the south, make American history a living and vital subject.

In the use of pictures I wish to emphasize another type which can be secured but is never considered of much value. Sometimes, indeed very often, we come across drawings of early periods and tho these drawings are not real pictures of the life they represent they do show a picture of the life of the one who has drawn them or painted them. What a wonderful illustration of the spirit of the age is seen in that picture of the "Last Judgment" or of the ideas of the artist who drew the picture of Alfred the Great lying upon his death bed with his attendants near by and the angel descending and catching as it were the soul of Alfred as it departed from his mouth, an object as real as any organ in his body.

Another type of museum work which cannot be overestimated as to its value in High School is the use of source material. When the history teacher can send her students to the sources she obtains a deeper interest in her work. Of course she must be careful not to ask too much of her students along this line for the, shall I say, average student does not obtain so very much from the reading of the sources and a careful selection must be made of them. However the mere looking over of this material as illustration of the times is of untold value and many students will read of their own free will in this

material. The Congressional Records serve to illustrate methods used in Congress and the United States Documents give much rich material, while today we have numerous books of source materials, where selections have already been made by our best authorities.

Now lastly I wish to mention a third type of museum work which has been of special interest to me, and that is the use of old books. Few of us realize how much rich material can be secured in city libraries or in private homes. The old book which illustrates so much of the age in which it was printed by the type used, the method of binding, the drawings, and the content, gives much historical interest. Just a few weeks ago my students were sent to look over an old autobiography of Hennepin, written in 1695, and printed in England. This book was found by our city librarian in an unexpected corner of the cellar of our library last year. Two years ago a class of students was asked to read different books for reviews in United States history. One of the girls wished to know if she might read a life of Henry Clay which she had in her home library. This book had been written by a contemporary of Clay. After seeing the book I granted her request and suggested that the life might be of special value. The fact that her book was printed in Henry Clay's time and that the writer was a real friend of Clay, naturally afforded her great interest.

I feel that we teachers are but opening up in a very little way certain paths which will lead to untold history interest in the future. Tho we must be careful in our selection of material for our museum work and tho I insist the objects that are secured as mere objects are of little value for High School work in the class room, I urge the increased use of pictures, reprints, photographs and postals, the use of the stereopticon and the personal drawings of the pupil. I also would encourage the enlargement of our selection of documentary material, state papers, contemporary biographies, and the like. And finally I suggest a new enthusiasm in finding history books of the past which widen an interest in the life of any age for the young man or woman who finds in this way an interest in a field he has never thought about and thereby is awakened to look farther and search for deeper knowledge of life in its real sense.

### General discussion.

The chairman pointed out that in spite of the apparently different views presented in the two formal papers, there was an agreement in all fundamentals that were involved.

Attention was called to the Classical Museum and the Museum of European Culture in Lincoln Hall and the possibility of a traveling museum exhibit starting from the University was suggested.

Professor Page requested the floor to point out that there was a great fundamental difference between his views and those of Miss Renich. He stated that he had not emphasized the use of the museum in high school work because he thought that its value there was indisputable. He went on to illustrate his work and its success with high school students.

Mr. Page was asked whether the museum objects were of superior value to pictures. He replied that he thought they were, because they were real; the thing itself is far more true than any picture of it.

Mr. George H. Gaston of the Chicago Normal College read a paper on "Geography and the history teacher", of which the following is an abstract:



One aspect of this subject is the influence of geography upon history and another is the use of geography to make history real; the latter is the underlying thought of this paper. The first part was a brief outline of the evolution of the map and the second, a few suggestions as to the importance of geography in general history and also in the more detailed United States history.

Maps, like certain other very common things, such as the clock, the calendar and the names of the days of the week and of the months of the year, are found upon investigation to have very interesting origin and development. Their very commonness and cheapness render it difficult to picture the conditions when the real nature of the earth's surface was unknown and what was known was poorly represented; moreover, the task of following the race in its task of correctly mapping the earth's surface is equally difficult. These two reasons and a third, namely, that history teachers often fail to try to make certain aspects of history real, will account very largely for the lack of appreciation of the geographic aspect of history.

Maps have been, from time immemorial, found among different peoples, but until Greek times no attempt appears to have been made to show impartially all the known regions. The Greeks were the first to try to picture the world as a whole with the Mediterranean Sea well toward the center. In spite of the progress made by them, however, some of the worst errors of map making were perpetuated into the modern period by certain map makers.

In order to confine the discussion within definite channels the following points were elaborated in the order given: (a) motives for the successive steps in the mastery of the world; (b) the growth of the idea of the sphericity of the earth; (c) the origin and final establishment of the points of the compass; (d) the measurements of the earth and relative locations; (e) methods of increasing and utilizing geographical knowledge; (f) devices for best representing the curved surface on a plane.

The number of motives may be reduced to four, namely, curiosity, more or less scientific; love of adventure, thirst for conquest, and desire for trade; in some exceptional cases love of precious metals already mined and deep religious zeal.

In regard to the development of the idea of the earth's sphericity there are three points of interest: the very early date of the first belief in that fact; the fact that so many centuries elapsed before the idea was popularly accepted; and the close association that has always existed between the form of the earth and the nature of the heavens.

The adoption of a satisfactory system of directions involves three points: the plan adopted must be universally known and applied; it cannot vary from age to age without hopeless confusion; and there is no inherent reason for the adoption of one plan rather than another, since it is altogether a contrivance of man himself.

The measurements of the earth and relative locations involved chiefly actual measurements of land surface, mathematical calculation, application of astronomical knowledge, experiments with the sun's shadow, and, in some instances, eclipses of the sun and of the moon. All of these devices were rendered much more serviceable by mechanisms perfected well on into the modern period. It was much easier to calculate the circumference of the earth than to fill in the details of land and water afterwards. Assistance came in a thousand ways from people going into all parts of the world for a variety of reasons and with infinite care this knowledge has been sifted and recorded by interested persons. Pending the preparation of an adequate map, various makeshifts such as itineraries, portulanos, seaman's guides, etc., were used quite extensively.

Familiarity on the part of the teacher with the common kinds of map projection is advocated as a necessary condition of making profitable use of maps in class instruction.

In regard to the importance of geography in general history, it was suggested that a good knowledge of world geography and a clear notion of the effect upon man of the areas from time to time made available for his further use, would be of invaluable service to historical study.

It is maintained that colonial history in the United States can not be understood and appreciated without close map study; that intensive study of the public land question would reveal the great significance of actual land survey and settlement; that the ordinary history of the development west of the Mississippi River is lacking in the proper emphasis upon certain points in the real life of that wonderful region, and, finally, that the study of the subdivisions of the Northwest Territory for purposes of local government affords an unrivalled opportunity for stimulating interest and making clear the nature of many of our most important governmental units.

Professor Charles Hughes Johnston next undertook to discuss "A proposed reorganization of history courses in the high school". He based his remarks on the report of the committee on the social sciences of the National Educational Association, copies of which will be distributed shortly as a bulletin of the Department of Education. The substance of his discussion follows:

#### A PROPOSED REORGANIZATION OF HISTORY COURSES IN THE HIGH SCHOOL Charles Hughes Johnston, University

Since the world-war begand every thinking man has been surprised both at the ignorance of himself and of the American people in general in matters of history, especially of those conditions, economic and otherwise, which more definitely shape international policies. He finds himself inevitably on each issue led out into the larger relations of human experience. He has to *think historically*, and it is hard work for one who has had little training in it. He often builds up his social science point of view by going backwards into history. It is at least an open question also whether the high-school pupil may not often better do this in some such way, only more systematically, rather than by the formal chronological method.

We wish to ascertain the most reasonable grouping of elements in school life and thought that will make an army of one and one-fourth million boys and girls\* realize that they are members of society, that they have duties towards it and correlative rights and that no rights exist without corresponding duties, that it is their business to have views on matters of civic morals affecting the local community, the city, the state, the nation, even the larger society of the world. The political state with its activities is only, as Green has said, the shell, the superficial appearance of the real things of history. The nation, the genius of the group, is the real thing, which, profoundly a part of the people, we can neither make nor destroy. The subjects to be really understood in the new history, or social science,—*understood*, sensed appreciatively by public-school pupils as well as others, are such things as impulses of national feeling, the growth, development, social conditions, industry, and commerce of a nation; in comparison with these the surface doings of kings and political leaders may be often of minor importance.

The school's most serious and pressing work now is to teach young American democracy these facts of social import. The difficult social situations ahead of us must be anticipated by the special group of teachers in charge of the social studies. Our curriculum philosophy, so far as these subjects (history and other social studies) are concerned, must be thought out with a full realization of

\*Add two and one-fourth millions if we extend secondary education downwards into the seventh and eighth grades.

the great difficulties. The modern democratic state is in danger. Other states without our democratic organization have done some things in a far better way than our democracy has done them. Our whole democratic government, democratic social life, democratic tradition, and democratic education (what there is of it!) enrages the sense of organization and ideal of social order, not only of a Prussian, but also of many a citizen of our own country.

Our question is, "What are our public schools going to do about it?" The answer is, they are going to do most of what will be done. Education for modern citizenship is a large order and covers the whole of education. In a legitimate sense however we may place the definite responsibility upon the courses in history and the other social studies, and inquire specifically what are the modern proposals for courses to meet the need indicated above and what is the educational principle underlying and justifying or condemning these proposals for radical organization. I shall deal with just one of these proposals, one which is significant and characteristic of the reforms advocated.

Human history has come to be interpreted as a record of human progress, of *actual* rather than symbolic improvement, as measured by an intelligent human standard—not merely continuous accumulations of results in some specified direction. The purpose of man's history must necessarily be the "ability to so use the materials of the world that they will be permanently used in the light of the ideal perfection they naturally suggest." This likewise applies to the section of history which recounts national progress.

Everybody perhaps now will grant that we as a people need a clearer understanding of national ideals. We need to realize what freedom means. We need to acquire convictions regarding the kind of organized state which will make real freedom possible. We need to see that our nation as we idealize it cannot be the spontaneous and easy outcome of an indefinite number of scrambling self interests or hyphenated group interests. Sectionalism as we now see it just after a national election is easily our weak link. It indicates conflicts of social and of purely political ideals. How to get out of this 'remedially' is not simple.

One of the chief agencies for developing the good aspects of a nationalism which will be a friend and not a foe of internationalism, is the public school. This agency takes first rank. A sentimental seclusion from this world's affairs, however, has dominated present instruction in history and social subjects. We are now in a new sense in the same world in which Europe exists and into which Asia is coming. Industry and commerce will continue, and increasingly, to interweave our destinies. The older state of mind has become a dangerous illusion. Real national preparedness depends a great deal more upon whether we teach American history and other social studies in our high schools in the right way than upon a few hours daily in perfunctory military drill. Our history must be seen for what it really is—a reflection of European movements and problems; as illustrated, for example, in waves of immigration which, as other things suggests our common and international world where world-wide forces are visibly operating. American history must be substituted for American mythology. We are the victims of a "whitewash of indiscriminate eulogistic language" which covers the difficult and also the interesting aspects of our social life. We are rarely vivid or 'fired' in our classroom depictions of struggles between interests entrenched in law, institutions and social conventions, and the requirements for further enlightenment and emancipation. We talk and teach about a democracy in the abstract as if it were busily and mysteriously working out the miracles for us. Our secondary schools in a measure and even our elementary schools, as well as our universities, should become the homes of serious thought and genuine convictions regarding our real social difficulties and conflicts.

The need for an important reconstruction of instruction in history and social sciences generally is admitted not only by educators like John Dewey and Snedden but by professional historians like Carl Becker and J. H. Hayes.



For perhaps even more radical reforms in organization of content and in method of treatment the reader is referred to a discussion by L. M. Sears.\*

Some of the radical but constructive views of reform in public school history involve propositions for carrying out in practice these views in their relations to a proposed reorganization of the entire administration of the public-school curriculum itself. "Reorganization" technically means such changes in school administration as will tend to group in three different units for both administrative and pedagogical reasons the first six grades, the next three grades, and the last three grades of our twelve year public schools.

The social science work for this new six-year, two-cycle secondary program is receiving fully its share of study by the reorganizers. There are good reasons for this. The social science work will be largely required of all, even when there are worked out differentiated curriculums in other subjects for the various student groups. Again in the mere matter of time available for work of secondary grade two more years will suggest greater possibilities. Again, there being on this plan three curriculum units instead of the old two-unit arrangement (8 grade and 4 high school), organizers of new social science courses will tend to conform more clearly to the three distinguishable cycle requirements and sequences of courses within these cycle divisions. Another is that history curricula and sequences are in perhaps the greatest need of reorganization upon some definite principles.

Can we in our reorganized system apply the French and German cycle principles of curriculum construction to the whole continuous sequence of new courses in history, and apply it in such a way as most nearly to realize the ideals set forth for the newer social science? In each of the French cycles we find distinguishable organizations of subject-matter method, degrees of difficulty and educational outcomes expected.

The kindergarten and four-four-three cycle arrangement of the French system is suggestive at once to those of us who are trying to do our curriculum thinking in terms of our elementary six year, junior high school three-year and senior high school three-year cycle. On some such framework we might make a strong case for the reorganization of our history, or social studies course. It may be for instance that this concentric method of teaching history is best suited to our first two cycles, while for our senior high school we should prefer to take up on a more extensive scale some definite period, using original sources and building definitely in some particular section of history, upon our junior high school's new foundations.

It is clear, too, that we must consciously through all our social science courses cultivate two definite aspects of nationalism; the first is that we have a nationalism to cultivate that is different from any of the nationalisms of Europe by being interracial and international in its make-up. We cannot therefore construct our social science for any cycle on quite as narrow lines as those indicated for France. This means, to quote Dewey, the tremendous task of "teaching each factor in respect to each other, taking pains to enlighten all as to the great past contributions of every strain in our composite make-up. Every pupil should know the rich breadth of our national complex of racial strains."

Dewey's second factor, which complicates curriculum making in history for American schools, is the fact that our distinguishing national traits have been the product of experiences in subduing nature,—not other peoples and other cultures. There being no more pioneering possibilities, the masses are disinherited in so far as external opportunities for developing this distinctive American combination of traits are concerned. The public school therefore must,

\*School Review for November, 1916, Content and Method in Industrial History.

See also C. H. Spence's three year scheme for secondary civics in "The Teaching of Civics in the Public Schools," 1909. M. Fouillee's scheme for 'sociology' for secondary schools in *Revue Internationale de Sociologie*, Oct. 1899, and M. Bertrand's 'Sociology', a combination of economics, the history of institutions, and social ethics, *Les Etudes dans la Democratie*.

through its social studies largely, compensate somehow for the loss above noted and continue this development of the distinctly American type, spirit, attitude, mind. If it cannot do this there will be a reversion to an undemocratic national regime and a false and artificial traditional culture—a "refeudalizing" of education; intellect and art and leadership for one group, labor and debasing obedience for the other.

We may well ask seriously therefore whether we can seize the present 6-3-3- plan of reorganization wave, and at the same time capitalize the invigorating newer ideals of social science by offering a definite plan for the reorganization of history courses for all three cycles of public education,—a plan so definite that future textbooks and other social science material can conform to its requirements and that teachers can consciously develop methods and apply principles of sequences consistent with the new aims and new material and the new administrative machinery.

The North Central Association Commission last year disapproved the prevailing method of distinguishing elementary from advanced courses by mere chronological sequence of topics. In the direction of fundamental distinctions which should mark off courses in one cycle from those in another it suggests a different method of use of texts for senior high school courses, more, and a different kind, of collateral reading, and, because of the few students who elect history courses throughout the full sequence, a course in general history something like the French course in the "Embryology of Civilization" which introduces their highest cycle. These suggestions for improvement merely tinker with the old order of things. There are, however, many experiences available for study which represent definite attacks upon the problem of working out a genuine cycle system, a sequence of history courses.

Perhaps the most important cycle organization of social studies and the one destined to be the most influential nationally is the one recommended in the Report of the Committee on Social Studies of the National Commission on the Reorganization of Secondary Education of the N. E. A.\*

The National Commission on the Reorganization of Secondary Education was appointed by the N. E. A. in 1912, in a way taking over all the work of a former committee on the Articulation of School and College which itself had been a second edition of the Old Committee of Ten. This Commission is composed of a reviewing committee comprising eleven members at large and the sixteen chairman of the special committees, each of which is composed of about ten members supposed to be experts in the special fields of subject-matter or administration with which the committee is to deal and upon which it is to present a report with recommendations for high schools generally throughout the nation. The particular report dealing with social studies has been approved by the reviewing committee of the commission and will soon be exerting its maximum influence we may suppose. For many reasons this report, with the possible exception of the report on the administration of secondary schools, will be the most widely read and the most widely accepted.

One of the most important historians on this committee is Professor J. H. Robinson; a sort of text for the report is the following from his pen: "The ideal history for each of us would be those facts of past human experience to which we should have recourse oftenest in our endeavors to understand ourselves and our fellows. No one account would meet the needs of all, but all would agree that much of what now passes for the elements of history meets the needs of none. No one questions the inalienable right of the *historian* to interest himself in any phase of the past that he chooses. It is only to be wished that a greater number of historians had greater skill in hitting upon those phases of the past which serve *us* best in understanding the most vital problems of the present." The most fundamental, distinguishing, and also the most questionable, principle assumed throughout the report is that "the most vital problems

\*Bulletin 1916, No. 28.

of the present" for the high school pupil are the problems which he himself is facing now, or which are of direct value to him in his present process of growth. The committee believes that it will thus be possible to substitute a more fundamental and a more pedagogical principle than merely that of chronology for organizing the material that shall constitute the courses in the social studies throughout the whole extended six-year secondary program.

The term "social studies" rather than 'history' more adequately suggests the subject-matter directly relating to the organization and development of human society or to man as a member of social groups. In common with all subjects in our extended six-year secondary school the controlling aim of the social studies is social efficiency. The specific aim, however, is "intelligent and genuine patriotism," this rightly conceived being among other things a real step toward neighborliness among nations.

Most attempts to "socialize" the academized material even of common civics courses, to say nothing of the old-line history courses, have been superficial and mechanical. This committee says the determining factor in choice and organization of materials and in method of teaching it also, should be the student's immediate needs of social growth: (page 11). "The high school course has heretofore been determined too largely by supposed future needs and too little by present needs and past experience. The important fact is not that the pupil is getting ready to live, but that he is living, and in immediate need of such mental and social nourishment as will enable him to adjust himself to his present social environment and conditions. By the very processes of present growth he will make the best possible provision for the future. This does not mean that educational processes should have no reference to the future. It does not mean, to use a concrete illustration, that a boy should be taught nothing about voting until he is twenty-one and about to cast his first ballot. It means merely that such instruction should be given at the psychological and social moment when the boy's interests are such as to make the instruction function effectively in his processes of growth. A distinction should be made between the "needs of present growth" and immediate, objective utility. As the boy's mental and social horizon broadens with the process of education, he will become inquisitive about the facts and relations perhaps long before he has direct use for them in the affairs of life."

Assuming then that the first six grades have been modified properly in accordance with the demands for social education everywhere, the Report proposes the following plan for junior high school (7-9 grades) and senior high school (10-12);—

7 to 9 years: Geography, European History, American History, and Community Civics, three subjects proper with explanations which I shall give later.

10 to 12 years: European History to about 1700, European History from 1700, American History since 1700, and a course in social, economic, and political problems.

This scheme assures provisions for emphasizing consciously, from the first grade up, the civic aspects of education, though no 'civics' as a special subject appears before the 8th year, no geography as such before the fourth, and no history before the sixth. Nevertheless, the child throughout the elementary no less than the secondary school is receiving definite instruction in civic relations, just as he is all along learning something of geography and historical relations. He is getting the citizen's attitude and is having the foundations laid for later systematically building for himself an organized conception of what his membership in the community, be it local or state or national or broader still, means. The "gang spirit" of boys and the "groping sentimentality" of girls can then, in the next few years of social study (13 to 15), be more readily turned into "useful channels of social feeling, social thought, and social action."

The Report elaborates three general plans for this junior high school period, each subject to variations. All of them are now being tried out. One is



the old Indianapolis plan with geography, history and civics in sequence; another, the new Indianapolis plan, with a sort of inter-organization of these subjects in such a way that the pupil hardly knows he is studying different subjects; another is the Philadelphia plan, which starts civics as a distinct subject early in the grades, gradually increasing the number of hours per week as the subject grows more complex and the student more mature.

The term "*community civics*" suggests a point of view; and this point of view is applied to the study of the local community. Emphasis is laid on the local community because that is the community of familiarity for every citizen; and for the child this community is in the foreground of experience. The pupil is led to compare the social conditions of the present with those of the past, and of the immediate community with those of other communities. This should lead to the new type of history advocated for later years. The study of vocations, for example, during this period, while incidentally helping the pupil to choose the right calling in life, would tend to create a better understanding and better relations between the different classes of people.\*

This committee recommends in detail illustrative organizations of social studies, suggesting alternative programs, and consciously avoiding excluding still other adjustments to requirements of local conditions.

The report contains many interesting and important proposals and directions. There is a large section devoted to helpful distinctions between history and civics, one on local history with illustrations of how topics of this kind are being developed somewhere and another on adaptation of the whole scheme to rural communities. The amplification of the course for the ninth year which is to be either the finishing year of the junior high school cycle or the first year of the high school in the old organization.—important in either setting, is a feature, a course characterized by a more systematic introduction of national concepts, world interests, and civic relations of vocational life. There are further explanations of how in the senior high school there may even be differentiation of curriculum and modified social studies courses for the different curriculum settings suggestions discrediting the vain efforts to remedy the present situation by merely adding more history courses of the old type which gains nothing, and discussions of the new college admission questions this new order of things will raise.

As to the report, one may disagree with its fundamental philosophy, or its method, or its subject-matter or its arranged sequences, or finally its cycle organization; he will probably in any case find it typical of the many current attempts to improve public education.\*\*

The generously contributed and consciously felt proportionate taxes paid by the ruling, (the official) ranks clearly for them, and for the beneficiaries, purchases the divine right to rule. Born to your station, if you are one of the people, your excellent school is ready-made for you. Neither you in your vocational choice, nor your school in its curriculum choice, can, nor has the need, to experiment. Central control benevolently and imperially standardizes, and on a uniformly high level, areas as large as states. The only price for such a perfect state machinery for efficiency is spontaneity and resourcefulness of the people. The spirit of faith in public service is highly desirable, the willingness to participate is noble, especially as it is a thing outside ourselves. What can be nobler? With Professor Lindsay we say, "the same faith and the same spirit for service for ends outside ourselves; but for a projected end which shall be 'our collective organization', made up of ourselves, for doing things that we cannot do as individuals, cannot do by means of any lesser authority than that which the state itself possesses."

Nothing undemocratic is essential to the development of a nation great

\*For an adequate statement of this point see the report, page 27.

\*\*This "Report of the Committee on Social Studies", has been issued as Bulletin of U. S. Bureau of Education, 1916, No. 28, pp. 63. Members should secure copies and read before the 1917 conference.

and strong. At the present an aggregation of racial and sectional groups, by placing social welfare above selfishly conceived personal rights and by cultivating social policies, we can evolve into a real nation of patriots.

In the spirit of this author! "Let the schoolmaster in America bestir himself and the still more numerous schoolmistress seize her opportunity, forget to teach hacknied and dead-letter phrases of her constitution, and cast aside the formal civics that never gets beyond a dry description of government as it might have worked but never did, and instil in the mindes of the youth of today a real appreciation and understanding of what our city councils, commissions and legislatures, the health, labor, education, and other departments of city, state and national governments are doing or failing to do to meet the real needs of each community. Let them above all fight the cynicism that regards a public officer as a weakling or a crook. Let them foster a respect and ambition for public service of every kind, and it will not be long before a new national spirit will be aflame in the land, and the genius of the American people, enriched as it had been by the pioneer spirit of so many lands, will devise the necessary machinery for social and democratic government in which liberty and efficiency are no longer alternatives, but are one in the basic institutions of a free, happy, and united people."

History and Civics teachers should secure copies of the report discussed and familiarize themselves with it in preparation for the discussion planned for the 1917 program.

The afternoon session was called to order by Mr. Russell Story.

A paper entitled "Dynamic Civics" was read by Mr. E. E. Hill of the Chicago Normal College.

#### DYNAMIC CIVICS.

E. E. Hill, Chicago Normal College.

As its first principle, dynamic civics lays stress upon the importance of bringing the student wherever possible into actual working contact with civic realities. One way in which this can be done is by emphasizing at first the work of government rather than the details of its machinery. Why do we have this thing that we call government? What brought it into existence? Without attempting at this time to go into the various theories as to its origin, its continued existence can be explained and justified only upon these grounds, that it serves human needs and promotes human progress. Whatever its origin—the essential question that we are now concerned with is how it acts to enlarge human happiness. A fruitful study of civics, then, must be based upon an understanding and experience of social and individual needs.

This does not mean, of course, that the teaching of civics is to begin with a scientific analysis of human wants. Such a method is possible only with mature and advanced students. But the civic training of the child should begin with the everyday experiences of the home life of the child even before he has reached school age. In the home life he may become aware of the fact that his parents are doing things for him and that he in turn owes them obedience and certain little services. The dawning consciousness of these reciprocal relations and his active participation in them is the beginning of civic knowledge and training. When he enters the school world the circle of these relations widens. It includes now not only the members of his family and the few playmates of his home life but teachers, principal, janitor, classmates and others. He comes to know the function of the policeman, garbage man, fireman, postman and other public officials and something about the work of the milkman, carpenter, shoemaker and other tradesmen who are ministering to his daily wants. By the time he reaches the fourth or fifth grades he becomes interested

in the organization of activities such as the postal system, the life-saving service, the fire and police departments; and two or three years later he is able to comprehend to a considerable extent the organization and workings of the different units of government of which he is a member—local, state, and federal. But throughout the process the emphasis has been upon the work of government rather than the details of its machinery.

Another way in which this principle is carried out is by substituting whenever practicable first hand knowledge and experience for the textbook lectures, and outlines. The tools of dynamic civics are experiences, observations, reports, discussions and actual practice. It also gathers its substance from the daily papers, official reports, and current magazines. Not that the textbook has no place in this subject as it has in other fields of educational work. Next to the teacher the textbook is, without question, the most important agent in the educational process, but its function is frequently unduly magnified. It is placed before the awe-struck student as the sum and substance of all that has been said or can be said upon the given subject—the final authority upon the matter—whereas the textbook is too frequently only a collection of dried-out material designed primarily to fatten the pocketbook of an enterprising publisher or tickle the vanity of a painstaking compiler.

In a fruitful study of civics, at any rate, the textbook must be relegated to a subordinate place. It may be used as a means of suggestion and direction but not as a catechism. It may be regarded also as a cold storage plant, to be drawn upon for material which cannot be obtained in fresh supplies. A face-to-face talk with a policeman, garbage man, shoemaker, or carpenter is far more interesting than secondhand statements found in textbooks or pamphlets or made by the teacher. A visit to an engine house, a life-saving station or a black-smith shop is far more impressive than lessons just "learned" from a book, and serves to give emphasis and meaning to what the book may have to say. Facts that can be readily obtained from the people engaged in the activities or from original reports are more virile and up-to-date than the condensed food out of carefully prepared pamphlets. Knowing how and where to get fresh material on a subject and the habit of going after it is even more important than a knowledge of the material itself. Visits to headquarters of political activities, such as the town or city hall, village, city, county and, whenever possible, state and national institutions, courts, legislative bodies, conventions, polling places, and other political gatherings, tend to make civic life a real thing in the minds of students.

It is not contemplated, of course, that all the students of all the civic classes in a city shall visit all of these places. Such a thing is manifestly impossible. It would be an unwarrantable encroachment upon the school program, and upon the time and strength of teachers and pupils, and an intolerable nuisance to those engaged in doing our civic work. A few trips planned for each class or for committees from each class are sufficient to stimulate the appetite for this sort of thing and to start the young citizens in the right direction. Nor will these visits, if properly distributed and timed, prove any hardship to the selected hosts. On the other hand, the visits will be truly welcomed, as a general rule.

It must be admitted that progress by this method will seem much slower than that secured through a rapid mastication of the contents of a well ordered textbook. But the habit of getting into direct touch with civic realities and the impressions left by these experiences will be worth far more in the end in making for good citizenship than can any amount of half-digested information crammed from textbooks and classroom lectures.

A third way in which the student of civics may be made to feel his vital connection with civic realities is to impress upon his mind something of a sense of joint-ownership in public property. He is a joint-heir to a vast estate and a



partner in big undertakings. Streets, boulevards and bridges, public buildings, parks, museums, and libraries are a part of this estate. He is a part owner also of great natural resources, although a large share of this portion of his birthright has been sold by the trustees of his estate for a mess of pottage. Inventories of these properties, local, state, and national, and a study of their management, the expense of maintaining them, and the returns from them, social and individual, help to give a sense of dignity to citizenship and a feeling of responsibility which can hardly be secured in any other way.

Another fruitful line of study under this same head is the question of the enlargement of the number of the plants that are a part of our common estate. The city, for instance, owns the streets, paying for their construction and maintenance usually out of a general tax levy. Why should the city not own and run the street car lines on the same basis? The city owns and operates a public plant to supply water to all of its citizens. Why should its inhabitants not supply themselves in the same way with gas and electricity? As a nation we have a great plant for handling our letters, papers, magazines, and even merchandise to a limited extent. Why should it not also handle our telegrams and operate the telephone system? Why should we not, as a people, own and operate our great public thoroughfares—the railroads? Would it not be possible and profitable for us in many ways to enlarge our plants for furnishing public services? The function of the teacher is not, of course, to stuff pupils' minds with dogmatic conclusions but to stimulate interest in these questions and lay a foundation for intelligent investigation.

But the aim of civic teaching should be to produce progressive as well as active citizens. Dynamic Civics, therefore, as its second great principle emphasizes the importance of cultivating an open minded and progressive spirit. I shall suggest here only two out of a number of ways in which this may be accomplished. One is the method of comparison. The community that lives unto itself stagnates. We need constantly the stimulus that comes from comparing ourselves with others. The big, vital problems of different communities and states are essentially the same. In their attempts to meet these problems each community may learn much from the experiences of the others.

But of even greater importance, perhaps, than this comparative study of civic questions as a means of developing an open minded and progressive spirit is the study of the history of political institutions and problems. Dynamic civics places great importance upon a historical background. Political institutions, laws, and governmental machinery are not static in their nature. They were not handed down to man written upon tables of stone, the final and unchangeable fiat of an omniscient and omnipotent creator. As we have them today they are the product of human experience, the fruits of an evolutionary process whose dynamic force is to be found in man's struggle to satisfy his desires and to realize his ideals. They are still in the process of making.

That over conservative attitude of mind such as regards the constitution of the United States as the offspring of some supernatural wisdom to be enshrined forever in a Holy of Holies away from any desecrating touch of present-day criticism and such time-honored institutions as trial by jury, forms of court procedure, laws guarding the "sacred rights" of private property, freedom of contract, etc., as too sacred to be tampered with by present-day man has tended to seriously retard our progress as a nation leaving us complacent and self satisfied with the political achievements of our ancestors, while other nations have outstripped us in the realization of some of the very ideals which our forefathers first conceived of and left to us a heritage and a responsibility.

The remedy for this excessive conservatism—perhaps we might diagnose it as a type of political locomotor ataxia—is the historical treatment of civic study. The student of civics should know something of the origin and

development of customs, laws, institutions, and social problems as we have them today.

Closely connected with this principle is another upon which the teaching of civics in American schools should lay stress, the cultivation of an understanding and an appreciation of American ideals. It is not enough that the citizen acquire a knowledge of his social environment as it now is and a habit of acting helpfully within that environment. It is not enough even that he know how political institutions about him came to be what they are. Social progress demands yet more than this, it calls for a power to set up ideals, a power to conceive something better, nobler, higher than that which now exists, toward which to strive. A vision of certain ideals and a determination to realize them are the forces that must work in our national life to bring about civic growth. And what are these ideals? They have become such commonplaces upon our tongues that they have almost become rubbish in our minds. Freedom of thought, freedom of speech, freedom of religion, freedom of action and of opportunity, and equal justice to all—how ordinary these expressions sound to most of us today! But how full of meaning were they to the brave souls who saw them at first only as beautiful human dreams and commenced the long struggle to give those dreams reality! Certainly one of the first duties of the civics teacher is to find some way to impress upon the mind of his pupil something of the meaning of these great blessings which as yet are fully enjoyed by only a part of us, and only partly enjoyed by most of us, and to inspire in him a determination to work without ceasing to the end that all of these blessings shall be enjoyed by all of us.

To secure and insure these blessings our forefathers laid the foundations of two great institutions, democratic government and a free public school system. A long record of political history had impressed the lesson that it is not safe to commit the reins of governmental control unreservedly into the hands of the few. To secure equal rights and equal opportunities for all we must have a government that is responsible to and under the control of all. That we have not yet realized our ideal of democratic government hardly need be stated. We seem to have escaped kings and lords only to fall a prey to conscienceless political bosses and piratical captains of industry. This pessimistic view, however, is dispelled by a brief survey of our political history, which reveals the fact that democratic government, not only in form but as a force in protecting and serving the masses, has made steady progress in our country from the time when it first began to take root in the soil of Virginia and New England down to the present day.

Democratic government alone, however, is not sufficient to secure that liberty and equality of which our forefathers dreamed. It is written that the truth shall make us free. The ignorant man, no matter what the form of government may be under which he lives, is not free. Real freedom can come to the individual only through a knowledge of truth, through education. In order that this might be within the reach of every one, the fathers of our republic, with rare vision, when they laid the foundations of a democratic state also laid the foundation of a great free public school system. The free public school is our best guarantee of equal opportunity, efficiency and democracy. Any civic instruction that fails to impress upon the minds of young Americans the importance of these national ideals and the work of these two great agencies through which we are coming to realize them, falls far short in its function.

There are two or three ways in which this third principle may be carried out; first, by a study of the nature of these ideals and their historical development; second, by awakening an interest in the lives, writings and speeches of some of our great Americans who have been inspired by these ideals and worked for their realization and third, by comparing social and industrial conditions in those lands where these ideals have not as yet secured any foothold.

To sum up briefly then the substance of this paper: dynamic civics aims to generate power in citizenship first, by bringing the student of civics in every way possible into direct and working contact with civic realities; second, by cultivating in him an open minded and progressive spirit and; thirdly, by inspiring him with a vision of American ideals.

These principles have recently found expression in what is known as "community civics" of which Mr. H. W. Thurston of the New York School of Philanthropy and Mr. Arthur W. Dunn, special agent in civic Education of the United States Bureau are perhaps the chief exponents. Some fifteen years ago or more, when a teacher of civics in the Chicago Normal School, inspired by Professor Dewey's famous aphorism, "The school is not a preparation for life; it is life," Mr. Thurston worked out his plan in his *Outlines for Teaching Civics and a Course of Study* which with some slight modifications was adopted and has remained to the present time as a part of the Chicago course of study for the elementary schools.

Mr. Dunn, like Mr. Thurston, also came under the spell of Professor Dewey's educational philosophy. Inspired by this and also by Thurston's work, he determined to make the study of civic life a more real thing in the school world. His textbook "*The Community and the Citizen*" is perhaps the most suggestive little work on this subject that has yet been written and his pamphlets "*Civic Education in Elementary Schools as Illustrated in Indianapolis*" and "*The Teaching of Community Civics*," published as Bulletins 642 and 650 by the U. S. Bureau of Education, deserve the thoughtful study of every one who is interested in the question of civic training.

Principal W. R. Spurrier of Princeton led the discussion of this paper.

We give here the substance of his remarks.

When the Sophists, the first body of professional educators in Europe, instructed the youth in virtue, the political arts, the management of city and household, and dealt with the relation of the individual to the universal, the problem of the relation of *reason to action*, of *theory to practice* was opened for discussion. Was not the new education an enemy of good citizenship, because it set up a rival standard to the established traditions of the community?

In the course of many generations during the reconstruction of education the basic philosophy of the Sophist has found its place in the best educational thought of today and has become the leaven of all progressive curricula.

We are concerned, chiefly today, with the place of this new education in the curriculum of Civics. Its method is described as "Dynamic". Has Civics a dynamic value? Is it a force that can produce results? All force is easily divided into active and latent. Unfortunately, however, our teaching of civics in the past has been based almost entirely upon the pre Sophist philosophy of theory only.

Dynamic civics socializes the individual and marks an attempt to help each one to find his proper place in the community.

I find myself wholly in accord and in sympathy with Mr. Hill's outline. I believe with him that: "the main object in the teaching of civics is to develop power in *Citizenship*, and that the specific aim of the pupil is to study some of the principles upon which the dynamic teaching of civics must rest and to suggest some of the ways by which these principles may be made effective. It has been suggested that Dynamic Civics aims to connect the student up with civil realities. This has been done and is being done by many teachers of Civics and the results amply justify the method.

Witness the practical training of the New York City High School boys who while acting as Junior Police handled the traffic at congested street corners,



to the entire satisfaction of the regular force. The boys here actually performed duties which they had doubtless read about in their civics text books, and experienced at first hand the thro of a citizen's responsibility when in the vortex of moving traffic. They learned by doing it.

The street cars of Indianapolis were filthy and unsanitary. The Company was appealed to by the users in vain, the pupils in the civics classes started on a campaign to have the street cars of Indianapolis clean and fit for the public. The condition of the cars was tabulated—accurate and reliable data was compiled by the pupils. The city council, the Street Car Company and various adult civic organizations were given this data by the pupils in a wholesale fashion. The Company ordered the cars cleaned. Will these pupils forget the civic lesson—was it dynamic civics? What will be the reaction of these same pupils to similar conditions when they become citizens?

The possibilities of substituting whenever practicable a first hand knowledge and experience for text book, lectures and outlines are many, and limited only by the energy and initiative of teacher. While it may not be advisable in some communities, yet a civic class in many communities can well make a study of the local food supply on sale as related to food laws of the state—weights and measurements—the presence of telephone poles on many streets at the sacrifice of civic beauty—unclean alley ways—sewerage—streets and many other local conditions. The class can very profitably get behind the movement for the "Annual Clean-up Day" and inaugurate a campaign to make their home community a "spotless town" and the city beautiful.

Sessions of the municipal council, the courts from the lowest to the highest in that community and other purely City institutions should be attended by the class as often as practicable. The assessors and tax collectors in making up their books would welcome and feel honored by a visit from the class. The Board of Supervisors—Board of Commissioners and every county officer would respond to a civics class in a wholesome spirit of co-operation. School elections, primaries. By emphasizing the work of government rather than the details of its machinery, the pupil is impressed with the thought that this is his country—his town and his home in partnership with others, and that it is upon him and his partners that the community relies for the discharge of its duties and obligations.

Dynamic Civics must cultivate a progressive spirit and an open mind. The development of our municipal, state and national governments has been replete with many changes. These changes have been necessary to meet the progressive ideals of our people. Washington, upon relinquishing the Presidency recommended to his countrymen that there be no party faction; yet time has shown that parties *are necessary* for an adequate instrument for the people of this country. Progressive legislation in one state is soon placed upon the statute books of another. Witness the recent progress of compulsory education laws, child labor laws, *prohibition* and equal suffrage enactments.

If the main object in the teaching of civics is to develop power in citizenship, it very naturally follows that some effective means must be devised whereby the fundamental principles of this citizenship may not only be known to boys and girls approaching the period of citizenship, but in addition, the obligations and responsibilities of that citizenship accepted as a patriotic duty and as a matter of course.

Mr. Parker of Quincy declared his belief in dynamic civics; the pupils ought to understand the problems of the country and the principles underlying. Dynamic civics ought to give dynamic citizenship. Patriotism suggests that we ought to submit our failures and study them. Government has shown too many failures. Teachers are responsible because of the character of their work. They must stand

for clean government; they must get their students to understand our government then to run it and not allow it to be run by crooks and bosses.

Dr. D. F. Walker of Effingham High School, asked whether there was any danger of dynamic civics becoming militant civics. Mr. Parker replied; "Yes, militant against the boss!"

How get away from the partisan element, it was asked. Some teachers found it impossible to avoid party politics, found it necessary to make use of party politics though not from a partisan standpoint. Mr. Spurrier thought it unnecessary to get into party politics; one can take up principles without referring to parties. Mr. Page found no difficulty in the party question; any organization that will carry out our ideals, the moment it fails to do that we ought to yield the party and find another. Mr. Hill had discussed party politics in class; discussed party principles and whether parties are trying to live up to these principles.

Mr. A. Kempe of Augustana College now spoke on "Methods found satisfactory in civics teaching:"

The educational value of the study of government is self-evident. Especially is this true in a democracy or republic, like ours, where the people themselves do the governing either directly or indirectly. In his Farewell Address, George Washington insisted that the more potent public opinion is in any country the greater the need of its being intelligent; and he might have added "and particularly upon political subjects."

My object is simply to relate methods, which in my opinion and in my experience, I believe, have brought satisfactory results. The teaching of elementary civics should begin early and as such should go hand in hand with geography and history. No child should be taught to draw a map of a township, a county or a State and not at the same time be taught what these names represent. A child should be taught that these names represent not only pieces of land but governments as well. The land is the place for the action of the government. This teaching in the grades will thus in a measure make up for the usual short time given to the study of civics in our high schools and academies.

Every teacher uses a certain method. It, of course, should be one that has been carefully chosen and is intelligently followed. In all methods adopted in the recitation and in study the teacher should keep in mind that the principal aim is the training of the mind and not only the acquiring of information and that in civics particularly, *facts* are of the utmost importance.

It is good to be original but let us get out of the ruts and grooves if we can find a better part of the road; and let us also remember that the ruts in some roads are the smoothest places and if we want to get anywhere, we must stick to them.

I have tried the "School City Plan"; that is for the class to branch out and take part in the affairs of the community in which the school is located. I have also tried the "Collegeville Plan", that is organizing the class into a community that performs in theory not only the functions of government, but those of business and banking as well. The objections to either of these plans is that it takes more time than it is ordinarily possible to allow for the subject.

*Methods*—The first problem is to find a suitable textbook; one which meets with an unqualified approval. This may not be possible, but as the textbook should serve only as a working basis, for this purpose there are now several excellent ones.

To make the subject practical, I distribute suggestive questions to the class every week. At the beginning of the course these questions are on the subjects covered by the text and are in the nature of an outline of the text. Answers to these questions are given orally in class by as many as the time will allow. I avoid following the text too closely lest the results be a mechanical memorizing. Constant review of these questions and of subjects that have already been studied is, of course, necessary and of practical value, especially whenever those earlier subjects are connected at all closely with the topic under consideration. Several of our present day textbooks have introduced such suggestive questions at the end of each chapter.

After about four weeks of above work, I have prepared additional sets of questions on present day topics and assigned the sets to different pupils, each pupil having at least one set for which he is held responsible. The family and the home as factors in a community are at first dwelt upon; then how the city, aided by state or nation, helps the normal citizens in relation to life, health, property, working and business conditions. Another: how the city, again aided by larger political units, takes care of its subnormal citizens, the dependents, the defectives and the delinquents. Lastly: how the City gets the money to do all it does. Reports either orally or written with the sources of information are made by one division on a certain day each week followed by a general discussion. In this manner the rights and duties of the citizen to his local government may be more clearly brought out, and will maintain the interest of the pupils. Four to six weeks are spent on these questions.

When a pupil has thus become familiar with so much of our system as exists and works under his eyes, which belong mainly to the state sphere, I take up the national government, leaving the states for later study. In the study of the nation, the constitution is naturally studied as the basis for the work. At this time of our work collateral reading is suggested and the practice of written reports on assigned subjects is continued. As much use as possible is made of the school library and of other libraries or sets of magazines to which the pupils have access. Information concerning the finances of the national government, the amount of trade, election figures, party platforms, lists of national officials, and a multitude of other subjects is contained in the political almanacs issued yearly by different newspapers. I have found it an advantage to require each pupil to secure a copy. Papers or essays are prepared and read to the class. A topical analysis is placed on the board before the paper is read. The authorities with book and page are given whenever desired. The number and the length of these papers and reports must depend upon the time and other limitations of the class. About half of the recitation period of each day is devoted to these exercises.

In the study of the states, a similar method may be pursued. Reports of the State Treasurer, of the County Clerk, of the City Auditor are published at intervals and give information regarding the assessment of property, the tax rate, receipts and expenditures summarized and in detail. Several copies of each can usually be obtained without much difficulty. Blank indentures, mortgages, and other legal papers are obtainable at the book stores or from lawyers at but slight expense. By placing these papers and reports in the hands of the pupils class-room work is made to seem more real and create an increased interest.

All this presupposes the presence of a skillful and wise teacher. The efficiency of any method depends upon what the teacher puts into it. Therefore in the last analysis, the vital element is the teacher. The facts and the knowledge



to be taught may be wisely selected and arranged, the successive steps may follow each other in natural and logical order, and the entire mechanism may work with beautiful precision, and yet if the whole be not vitalized by the living teacher, the system will be a comparative failure. The more scientific a method of teaching may be, the more essential is the teacher. Any method requires the insight, the invention, the skill, the inspiration of a master in the teacher's office. The teacher must come before his classes prepared to meet the high requirements of his art—to come before his classes with a full mind, a free hand, and a free eye—*preparedness*.

The discussion on this topic was led by Miss Anna B. Crackle, Thornburn School, Urbana, as follows:

Our constitution says, "all persons born or naturalized in the United States and subject to its jurisdiction are citizens of the United States and the states in which they live." So the boys and girls with whom we are working are not merely going to be citizens but are citizens now, and as such, have certain duties toward their government as well as privileges from it.

What are the values and purposes of Civics? What are the values of United States History? How are Civics and United States History related? Why teach this subject to younger pupils? Our answers to these questions will largely determine the phases of Civics that we will emphasize, and to some extent at least, determine the methods to be used.

As most of our pupils will reside for the next several years in the towns in which they are now living, or those of similar size and problems, I think it well to begin with their own city. If we can arouse sufficient interest in these children in their city conditions, its industries, public buildings, government, improvements, etc., that they will want to take part in developing and administering these affairs, we have made a good start toward intelligent citizenship.

We take first our own city. Its advantages as a residence city, as a commercial city. Real estate men are able to give students excellent information as to this side of the question. Then its early history; how it came to be so located; the first settlers, and how they lived. Its first public buildings and industries. The answers to these and similar questions can be obtained from early histories of the county, and much from older citizens. We ask one of the latter to give a talk to the class on "Pioneer Life in This City." One of the best helps at this time is to show views of early life and then of those of today.

After having a few lessons on government in general we take up the family. No matter how large the community in which we live or how completely it is organized, the family remains one of the most important means of providing for the wants of the citizens. The information gained in studying the early history of their city helps them here. The family life in early days, kind of dwellings, food supply and how they cared for their health. This may be compared with to-day and students can be led to see that we are dependent for our needs, largely upon arrangements supplied by the community and that most of our government is made necessary in order to take the place of what is lacking in the home life of the community.

After the home we take the school and talk over the relation of parents and teachers, and pupils and teachers. We have a frank understanding of the things which the pupil may expect of a teacher and what a teacher may reasonably require of a pupil. Here again we bring up our talk on the community and they see that just as a good citizen has duties toward the government under which he lives so they have duties toward their school. The pupil is led to see that he is not merely an individual but a part of a community to which he must contribute.

Having prepared this background I thought this a good time to introduce to them the work done by their city council. We had a lesson on how the mem-

bers of the council were chosen. Secured a map from the city clerk showing the wards of the city. They found out who the alderman was from their ward, the qualifications of a good council man and so on. The class then chose five or six boys to visit the city council and find out something of the way in which the business of the city was carried on. They were asked to find out the different committees into which it was divided and the purpose of this division. They went in time to see the meeting called and remained until the adjournment. The boys came back with a glowing account of the meeting; they also told of the reports of the different council committees. Those of the fire chief and chief of police seemed to have interested them most. I then named some boys to find out what they could about these departments. They brought back a regulation report from the heads of these departments and read it to the class. They not only found out something of the purpose, equipment, salaries, etc., but suggestions made by the fire chief as to the prevention of fires and by the chief of police as to how they could help to make their city better.

The Board of Health was visited by a committee of girls. In addition to finding out how they were chosen, their duties, compensation and these routine questions they also told them about quarantines, fumigation and how boys and girls could help in these, and how a good citizen would cooperate with the board to observe these rules closely. In connection with this problem of health we discussed methods of sewage and of garbage disposal, city housing, street cleaning, dust nuisances, city noises and suggested remedies for some of these annoyances.

Every teacher is confronted at times with the problem of devising means to secure, or gain, the interest of her pupils. Even in the best regulated schools there are days when enthusiasm lags. Then we must look for some exercise which will stimulate the self activity of the pupil, for self activity is the direct road to interest. I have tried a class debate at such times. This furnishes a powerful means of developing the logical faculty of our pupils.

It is a good test of their ability to think quickly and accurately and to express themselves intelligently. Though the debate should be as far as possible, the result of the pupils own effort, naturally much of its value will depend upon the direction given it by the teacher. If possible I let the members of the class choose their question, because if they make a choice it will likely be on a question in which they will take the greatest interest and it will be likely to be more profitable to them.

I have tried the following questions and been agreeably surprised at the results. (a) Resolved, that we should have municipal ownership of street railways, or of water or light plants or any other public improvements. (b) That a locality's means of communication is a more important factor in its development than the climate. (c) Resolved, That we should have a Literary test in our immigration bill.

I ask some outside persons to act as judges. Citizens are glad to do this, and if we can be fortunate enough to get some one who has had experience along this line, they can in making the decision commend the strong points and point out the weak ones in a way which will be very helpful.

In connection with our study of the Judicial Department we visited Circuit Court and we heard a trial. Before going to the court room we had several lessons on National, State and County Courts; the two kinds of juries, and how they were chosen. Also their duties. I tried to impress the boys with the fact that it was an important duty of a good citizen to act as a jurymen whenever he is summoned to do so. I made arrangements with the Circuit Judge to take a class to the court room at anytime that he could call a trial suitable for them to hear. I explained the nature of the case and the names of the plaintiff and defendant to the class before going to the court room. We went at nine in the morning so they might see court opened and the jury take their places. For some time after we arrived the different lawyers were busy

putting their cases on docket for the week. Then the case which we had come to hear was called. They saw the method employed by the lawyers in examining their witnesses and the cross examiners. As some of the persons called as a witness had not been previously sworn they had the opportunity of seeing them take the oath. During the morning the judge gave the jury a short recess and at that time took occasion to hear the reasons why the different veniremen could not serve as jurors. The students saw how important it was to appear when summoned and wait until properly excused by the court.

If it is not possible to attend a trial or our class comes at a time in the year when courts are not in session, we stage a trial ourselves. I have done this with quite satisfactory results.

Another method found satisfactory has been that of inviting business or professional men to give short talks to the classes on practical topics involving an explanation of good citizenship.

One of the most helpful methods I have found in the study of their own city is to make visits to the different industries and improvements. Some places which have been profitably visited are the Light Plant, Water Works, Railway shops, a Creamery, a Packing Plant, a Foundry and Harness Factory. We try always to have some definite object in mind in each of these visits. Sometimes two or three members of the class are given a problem to work out similar to the following: The number of employees in this particular industry, the salary paid them, the number dependent on this salary, and the per cent of it spent in this city. Another group are asked to take the raw material, used in the manufacture of an article, determine its cost, from whence obtained and so far as possible the changes necessary to make it a marketable product. Still another committee takes the output, the amount of this? Where sent? For what used and similar questions.

On our return from these trips we talk over reasons for the encouragement of these industries by the city, and how they aid in making our city more attractive and prosperous.

It is not practical to have each class visit the same industry. So after I have made several visits to different industries I arrange for an assembly of all civics classes, and have a report from one or two members of each class on the industry visited by their particular class. The students bring their note books and take down the interesting facts. They are given additional work if, after these they are sufficiently interested to visit on or more of the industries later, on their own time.

We do not adhere closely to any one text book in the teaching of this subject but glean our material from a great number of sources. In the study of elections for instance, we get information from the texts and then get sample ballots for each pupil and he is taught how to vote. These votes are counted and they are given the results. These lessons are taken a few days previous to an election. I then make arrangements with the judges or clerks in the parious precincts, conveniently near the schoolhouse, to allow members of the class to go to the polls and watch people cast their votes.

For your county work, real-estate offices, abstract and loan companies are glad to furnish maps, etc.

In the one semester allotted to this subject, we have been able to do the work suggested here and most of the work of the text book as well. We have tried to create in the students a pride in their city, so that they will want to help administer its affairs, keep its parks and streets clean, have a wholesome respect for its laws and to get them to feel that there is a responsibility going hand in hand with good citizenship. I believe that almost any method which we employ as a means to this end is the right method.

The session next took up the business before it.

Dr. Arthur C. Cole of the University was reelected as member and



secretary of the committee for this section with the additional duty of editing the proceedings for the section.

The two members of the committee and the chairman were authorized to select an active member of the section to act as chairman. M. L. Flaningam of Urbana was chosen for this position and accepted.

The section decided to take up the report of the N. E. A. committee on social studies in the 1917 meeting and the appointment of a committee to arrange this was authorized. The committee selected includes C. M. Thompson, University, Chairman; E. E. Hill, Chicago Normal College; Laura F. Ulrick, Kenilworth.

Reports were called for from the committee on Illinois history and from the committee on a reference library. Dr. Cole reported progress toward a source book on Illinois history in preparation by himself and Professor C. W. Alvord. In view of the inability of the committee on a reference library to undertake the task, Dr. Cole had prepared a specific list of recommendations which he read and submitted for discussion. The lists submitted were approved with the suggestion of one or two changes. The members of the section were urged to take a more active interest in its work and to cooperate with the committee in dealing with problems faced by social science teachers.

The meeting was adjourned.

A. C. Cole, Secretary.





# THE UNIVERSITY OF ILLINOIS

## THE STATE UNIVERSITY

Urbana

EDMUND J. JAMES, Ph.D., LL.D., President

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The library collections contain (December 1, 1916) 379,220 volumes and 93,207 pamphlets.

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